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AGELENID SPIDERS OF THE GENUS CICURINA

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The genus *Cicurina* was erected by Menge in 1869 for the species *Aranea cicurea* Fabricius (1793). Since then, various species from North America have been added to this genus. Petrunkevitch, in his catalog of 1911, listed 11 species from this continent. Exline, in a review of the Cicurinas in 1936, recognized 18 nearctic species. The material available to the authors of the present paper represents 50 species, more than half of them new. A number of species previously synonymized have been resurrected, while one species (*C. atomaria* Simon) is synonymized for the first time (under *C. arcuata* Keyserling). *Cicurina madrynensis* Tullgren from Patagonia is evidently not a *Cicurina*, as judged from the description and figures.

The genus *Cicurina* offers some perplexing problems to the taxonomist. It was realized early in this study that no mere superficial examination of the characters would suffice to distinguish the species. The epigyna, wherever material permitted, were dissected out and cleared to reveal the internal structure. A thorough examination was made of the spines on the legs, and the eyes; the height of the clypeus, and the teeth along the fang groove of the chelicerae were similarly carefully compared. A wide range of variation, and at the same time close agreement between certain species, made it difficult to define the limits of species in many cases. The genus was further complicated when a group of small six-eyed species and a totally blind one from Texas had to be included. Further clarification of the genus must await the accumulation of more extensive material on several of the groups.

We wish to express our appreciation to Mrs. Helen Blauvelt of Cornell University and to Dr. Willis J. Gertsch of the American Museum for the loan of specimens which aided materially in this study. We are glad to include in this paper the descriptions of two new species from Texas with the permission of Dr. Gertsch and Stanley Mulaik, who had intended them for another paper. The two species should bear the names of these authors.

METHODS

Measurements: When measuring a spider, the general practice has been to choose a 'typical' specimen and give its measurements as representative of the species. We find that in the Cicurinas the range of size and variability of the proportions makes this procedure unsatisfactory. Where a number of specimens of a species were available, we have measured all of them (five measurements: length, length and width of carapace, and length of tibia-patella I and IV) and have then taken the average as best representing the species. We have also listed the extremes for the specimens at hand, and the ratios of the average,

based on the length of the carapace as 100. Where there is so much variation in size, the ratio is in some ways more significant than the actual measurements.

Descriptions: The diagnosis of the genus is given in considerable detail, with indications as to what is regarded as typical for the genus. In diagnosing the subgenera, smaller groups, and species, the descriptions are reduced to a minimum giving only the essential variations from the 'typical'. Thus much duplication of detail is avoided.

Figures: Most of the drawings were made on Coquille Board, No. 3, and reduced to one-half diameter. Outline sketches were first made on thin typewriter paper, then transferred to the Coquille board by carbon paper. The outlines were filled in with black India ink; the shading was done with a black china-marking wax pencil; then the drawings were touched up with black ink, and white ink was used to further outline certain structures and emphasize certain details.

The drawings were not made to any definite scale. The size for each figure was chosen arbitrarily and depended largely upon the complexity of detail to be shown. Hence no importance should be attached to the relative sizes of the figures.

Spination of Legs: In order to facilitate the description of the spines, we have worked up a composite formula. We have taken a figure of a leg (figs. 2 to 5) and drawn on it all of the spines that might occur on any leg of any species. We have numbered the spines for purposes of reference (see Plate 2). No one leg, nor no one species will possess all of the spines shown; but all variations will be in the nature of a reduction. A typical formula for the genus is given and each species compared with this formula. A full description of the spines follows:

Femur: Spines 1, 2, 3, and 4 form a series along the dorsal mid-line; 1 and 2 always occur and are usually long and stout; 3 is missing in some of the groups; 4 may be quite small. Spine 5 is typically absent on leg II, but always present elsewhere. Spine 6 is present on all legs of all species, though sometimes quite small. Spine 6a is present only on leg I.

Patella: Spines 1 and 2, usually present, but often small and weak; often reduced to mere bristles on legs I and II.

Tibia: Spines 1 and 2 usually small and weak, especially on legs I and II, where they may be reduced to mere bristles; spine 1 is posterior from the dorsal mid-line close to the base; spine 2 is on the dorsal mid-line a short distance back from the distal end. Spine A is present only on leg IV of *pallida*, *simplex*, *shasta*, and *idahoana*. Spines B and C occur rarely, and then only on legs III and IV. Spines 3 and 4 are always present on the posterior face of legs III and IV, and always absent from legs I and II. Spines 5 and 6 are always present on legs

II, III, and IV; both are typically present on leg I, although 5 is frequently missing, its presence or absence often variable within a species. Spine 7 is present only on leg I, where it always occurs; it is often nearly ventral in position. Spine 8 is present only on leg I of *bryantae*.

Spines 9, 10, 11, 12, 13, and 14 typically form three pairs on the under side of the tibiae: 9 and 10 are present on legs I, III, and IV, and usually absent from leg II, or, when present, they are reduced; spine 10 may be present on leg II without spine 9. Eleven and 14 are always present on legs III and IV (except sometimes on leg III of the subgenus *Cicurella*), but are often absent or much reduced on legs I and II, where 11 may be present without 14. Twelve is always present on legs I and II, usually present on leg III, frequently missing from leg IV; presence or absence on leg IV often variable within the species. Thirteen is always present on all legs.

Metatarsus: Spines 1, 2, 3, 4, 5, and 6 form three pairs on dorsal side of legs III and IV, absent from legs I and II, except: 6 typically present on leg II, usually absent from leg I of female, but usually present on male; 4 and 5 sporadically present on legs I and II, together or separately, more commonly on male; 1 sometimes absent from leg III. Spine 7 usually present on leg III, occasionally present on legs I, II, and IV; when absent from leg IV, spine 2 is placed sub-laterally, sometimes nearly occupying the place of spine 7. Spine 8 always present on the anterior face of legs III and IV, and usually on I and II, though more frequently absent from leg I. Spine 8a rarely present on anterior face of metatarsi I and II toward distal end, in line with spine 8. Spines 9, 10, 11, 12, 13, and 14 are always present on all legs; spines 11 and 14 sub-lateral. Spine 15 present at distal end of metatarsi on ventral mid-line; always present on legs III and IV, usually on II, but rarely present on leg I.

Typical Formula: The typical spine formula, which is used, is as follows:

I: F 1, 2, 3, 4, 5, 6, 6a; P 1, 2; T 1, 2, 5, 6, 7, 9, 10, 11, 12, 13, 14; M 8, 9, 10, 11, 12, 13, 14.

II: F 1, 2, 3, 4, 6; P 1, 2; T 1, 2, 5, 6, 11, 12, 13, 14; M 6, 8, 9, 10, 11, 12, 13, 14, 15.

III: F 1, 2, 3, 4, 5, 6; P 1, 2; T 1, 2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14; M 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15.

IV: F 1, 2, 3, 4, 5, 6; P 1, 2; T 1, 2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 14; M 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15.

In the following descriptions of the subgenera and species, only variations from this arrangement will be noted. In the case of the presence or absence of spine 3 of the femur, it will be noted only for the sub-

genera; but all other variations will be given under each species. The following symbols will be used:

- + indicates that a spine is present which is not given in the typical formula.
- indicates that a spine given in the typical formula is absent.
- ± indicates that a spine is either present or absent.
- ≠ indicates that a spine is usually absent, but may occasionally be present.

The numbering given here to the spines is not intended to be presented as a standard system of numbering for spiders in general nor for any other group, but is merely given for convenience of reference in this particular problem.

Distribution: To avoid too much dependence upon arbitrary political boundaries as designations of areas of distribution records, we have here used a system based on degrees of longitude and latitude. The type localities, when definite, are indicated in terms of degrees and minutes of longitude and latitude, which places the locality within one mile. When the locality is not definite, the designation is given as "about" which probably places it within five miles. Some type localities, however, are too general to be treated in this manner.

Where more than the type locality is known for a species, the distribution is referred to in terms of area units one degree longitude by one degree latitude in extent. In the central latitudes of the U. S., this unit is about 50 by 70 miles. The coordinates of the southeast corner of each unit area is used to define the area. For example, Salt Lake City, Utah, is located between latitudes of 40° and 41° north and between longitudes 111° and 112° west; hence the area unit including Salt Lake City would be designated as 111·40 (the longitude first, followed by the latitude, separated by a raised decimal point); the area including Minneapolis, Minnesota, would be designated as 93·44, etc. Further supplementary data is given besides the area designation. In listing the locality records, each area unit which so far as we know represents a new record is preceded by a *. Where we saw actual specimens from a locality within a unit area, the area coordinates are followed by an !; where we had only literature reports for our locality data, the area coordinates are followed by R.

PHYLOGENY

Except for specializations in the genitalia, the Cicurinas are rather generalized Agelenids. They are evidently closely related to the *Coelotes* and *Chorizomma* groups of genera. They also show resemblance to the genus *Cybaeus*, from which they differ mainly in the spinnerets. Most authorities place *Cicurina* in the subfamily Ageleninae, but it would appear on general grounds to be more closely related to *Cybaeus* than to *Agelena*.

The species fall readily into natural groups and sub-groups. We have divided the genus into five subgenera, based primarily upon the internal epigynum of the female, but having also other corroborating characters. One of the subgenera, however, is based on an immature specimen, and will need an examination of adults to verify its placement. A few species, notably *C. pallida* Keys, and *C. bryantae* Exline, do not reveal close relationship with any of the others, and their position is assigned only provisionally.

The *robusta-utahana* complex has been split up into a number of species, some of which may prove not to deserve more than subspecific status. The *arcuata* complex is left intact as one species, though we expect that further investigation based upon more abundant material will result in its subdivision at least into subspecies. The *brevis* group is similarly another complex of closely related forms; the more conspicuous divisions have been made, but '*brevis*' still contains what must be several varieties, if not distinct species.

Diagram 1 shows our conception of the phylogenetic relationships within the genus. Although the general plan is probably accurate, further study may result in a number of minor changes.

Genus CICURINA Menge, 1869

Cicurina Menge, 1869, Preuss. Spinnen, 4:272.

Cicurina, Simon, 1898, Hist. Nat. Araign., 2:265.

Cicurina, Petrunkevitch, 1911, 1911, Catalogue, pp. 530-531.

Cicurina, Comstock, 1912, Spider Book, pp. 584, 595, 596.

Cicurina, Exline, 1936, Amer. Mus. Novitates, No. 850:1-25.

GENERAL CHARACTERISTICS.

Color: Carapace clear yellow to orange brown, sometimes more or less shaded with gray or dusky. Chelicerae light orange to chestnut. Labium and endites light orange to reddish brown with whitish or pale tips. Sternum pale yellowish to reddish brown, sometimes shaded with dusky, but never with distinct markings. Legs and palpi pale yellow to reddish brown, sometimes lightly shaded with dusky; usually lighter on basal segments and slightly darker beyond patellae. Abdomen whitish, light gray, yellowish gray, or dark gray; commonly unmarked, but often with more or less of a pattern of markings above. When the abdomen is light marked with darker, the typical pattern is this: a dark, slender, median longitudinal mark on basal half, a large, irregular spot on each side of this, followed behind on the posterior half with a series of about five paired spots, or more frequently five chevron-like marks. When the abdomen is dark with light markings, the typical pattern is: a pair of large longitudinal light spots on basal half, followed behind by a series of chevron-like marks, these latter becoming merely triangular marks near the spinnerets. Spinnerets pale yellowish to light reddish brown.

In the descriptions, when the word yellow is used, it designates a clear amber yellow, not a canary yellow; when orange is used, it does not represent an orange-peel orange, but more of a clear, light amber orange.

Size: The size variation within the genus is tremendous. The smallest species (*minorata*) is less than 2 mm. in length, while the largest (*ludoviciana*) reaches 13 mm. in length. Other sizes range all the way between these two extremes. Within a species, there is also wide variation in size; in some species, the length of the largest may be nearly double that of the smallest.

STRUCTURE OF FEMALE.

Carapace: Length usually a little less than $1\frac{1}{2}$ times the width. The outline from dorsal view is more or less emarginate behind, the sides convexly rounded, the cervical indentation slight or moderate, the head more or less squarish in front, about half as wide as the thoracic part in the widest place. In profile, the carapace is of about average height; the clypeus is vertical or steeply sloped, the height varying from about $\frac{1}{2}$ to 2 diameters of an anterior side eye; the elevation continues through the eye area at about 40 degrees, after which it rises only a little in a low arch back to the cervical groove; here it levels off for a short distance, then declines in a slightly concave slope to the base, the basal decline occupying about $\frac{2}{7}$ of the total length. The median depression is a short, longitudinal, line-like groove. Cervical grooves absent. Eyes small; at front of head; the eye area occupying from a little less than $\frac{1}{2}$ to nearly $\frac{3}{4}$ of the width of the head at the posterior eye row.

Eyes: Eyes usually 8 in two rows of 4 each, but sometimes 0 or 6. AM eyes dark, others pearly white. The anterior row shorter than the posterior row. Typically, the AS eyes are slightly the largest; then, in descending order of size, the PS, the PM, and the AM. The AM eyes show the greatest variability; sometimes they are the largest of all, sometimes equal to the PM eyes, sometimes very small, and in one group vestigial or completely absent. Typically they are about $\frac{2}{3}$ the diameter of an AS eye. The eyes as a whole vary considerably in size from one species to another. Anterior eye row usually slightly procurved, sometimes more strongly procurved, sometimes straight; eyes typically about one radius of an AM eye apart. Posterior row straight, or slightly procurved or slightly recurved; PM eyes typically about a diameter apart, slightly closer to the side eyes. The lateral eyes on each side contiguous or subcontiguous. AM eyes usually a diameter or a little less from the PM eyes. Median ocular area typically wider than long, wider behind than in front. The AS eyes usually a little less than a diameter from the PM eyes.

Chelicerae: Stout, essentially vertical, more or less geniculate in front, typically strongly so. Lateral condyle prominent. Each chelicera with a spine on the median anterior face at the point of geniculation; the tips of the two spines come together or cross. The fang groove has 3 teeth on the front margin, coarsely spaced, with the middle one the largest. The hind margin has from 4 to 10 teeth, those farthest from the base of the fang being usually small denticles; the typical pattern is: a short spur or tooth nearest the base of the fang, followed after a short space by three larger teeth, which in turn are closely followed by three small, sharp, closely spaced denticles. There is much variation in these teeth, not only between species, but within a species; sometimes the same specimen has a different arrangement or number of teeth on the two sides. While no dental formula will hold constant for a species, each has a typical arrangement, which holds true for most specimens. A fringe of long scopulate hairs extends along the front side of each fang.

Sternum ovoid to chordate; truncate across the front, acuminate behind, a narrow point extending more or less between the hind coxae, which are usually close together or only slightly separated. Intercoxal points usually absent or inconspicuous. Size of sternum variable with the species but usually rather large.

Labium usually a little wider than long, varying from slightly longer than wide to nearly twice as wide as long. Posterior corners excised. Labium narrowing anteriorly; tip broad, rounded, truncate, or shallowly emarginate.

Endites stout, more or less broadened anteriorly; ectal outline rounded; tips usually convergent around labium, but not touching; tips scopulate.

Palpus small, slender, extending only slightly beyond tip of femur I; spiny.

Legs rather long and stout; 4 1 2 3; spiny. The basal segments, including the tibia usually stout; the distal segments slender. The spine arrangement varies on each of the four legs of the spider, and somewhat from species to species. (The spines have already been described.)

Abdomen simple; a little wider than high; about $1\frac{1}{2}$ to 2 times as long as wide. Spinnerets sub-apical, of average size for the family; the front spinnerets more or less separated; colulus broad and short; hind spinnerets slightly longer than the front spinnerets, apical segment shorter than the basal. Respiratory spiracle close to the spinnerets.

Epigynum: From the external aspect, typically a thin sclerotized sheet, with a single transverse opening; the spermathecae and the canals more or less visible through the chitin. Internally, the epigynum varies from a fairly simple structure, as in *pallida* and *bryantae*, to a

highly complex structure, as in *robusta*, *arcuata*, and *sierra*. The simplest arrangement (see fig. 8) consists of a single opening into a small chamber (the atrium); from each side of the atrium, there extends anteriorly a more or less purse-like tube (the bursa); the bursa narrows into a slender tube (the connecting canal), which extends posteriorly and empties into a sac-like spermathecum; from the spermathecum originates a short fertilization tube which empties into the oviduct. From such a simple beginning, various complications have developed; these will be described in more detail under the various subgenera and groups. The long, slender, flexible embolus of the male palpus must be inserted through the long, tortuous connecting canals of the epigynum to reach the spermathecum. One mounted specimen of an epigynum (species *garrina*) contains the broken off embolus of the male, showing it extending from the bursa to the spermathecum.

STRUCTURE OF MALE.

In general structure, the male resembles the female. Some of the more notable differences are these:

Except for the abdomen being smaller, the size is not significantly different from that of the female.

The carapace is broader in the thoracic region, more rounded behind; head part smaller, shorter, and narrower. The clypeus is usually a little higher.

The eyes are a little closer together.

The chelicerae are more slender and vertical; less strongly geniculate.

The sternum is larger and proportionately broader.

The legs are similar to those of the female; sometimes a little longer and stouter; spines heavier, usually a few more than in female—spines 4 and 5 often present on metatarsi I and II, and spin 5 usually present on tibia I, when they are absent in the female.

Abdomen smaller.

The Palpus: The femur is simple and unmodified. The patella short and unmodified, usually with two long dorsal spines. The tibia typically short; with a large, long, flattened process on the ectal side, extending forward along the side of the cymbium and palpal organs. This process varies in size and shape with different species. In addition, there is a small transverse process on the ectal side of the tibia. A number of long slender hairs occur on the ventral side; a number of stout hairs extend forward from the dorsal side, along with two long spines.

The cymbium is usually simple. The tip is more or less extended, in some species being quite long. In some species, there is a small groove on the ventral side, into which the embolus fits. The embolus is very long and slender in most species; it arises from the posterior end

of the bulb, makes a wide loop around the mesal side, across the distal end of the palpal organs, and back into the conductor (it sometimes follows the groove, when this is present, around the tip of the cymbium). The conductor is located ecto-ventrally as is typical; the posterior end is extended into a "hook," which is of various shapes, usually differing with the species.

GEOGRAPHIC LOCATION OF THE SPECIES

As an aid in the identification of specimens, we have divided the area of North America between 25° and 55° north latitude, where *Circurinas* probably occur, into quadrangles five degree longitude by five degrees latitude in extent. Under each of these areas are listed the species which are known to occur there, and also the additional species which will probably be found there. The areas are designated by the coordinates of the southeast corner; for example, $75^{\circ}40'$ is the area between 75° and 80° west longitude and between 40° and 45° north latitude.

- $50^{\circ}45'$, None known; probably *pallida*, *brevis*, *arcuata*.
- $55^{\circ}45'$, None known; probably *pallida*, *brevis*, *arcuata*.
- $55^{\circ}50'$, None known; probably *pallida*, *brevis*, *arcuata*.
- $60^{\circ}40'$, None known; probably *pallida*, *brevis*, *arcuata*.
- $60^{\circ}50'$, None known; probably *pallida*, *brevis*, *arcuata*.
- $65^{\circ}40'$, None known, probably *pallida*, *brevis*, *placida*, *arcuata*.
- $65^{\circ}45'$, None known, probably *pallida*, *brevis*, *placida*, *arcuata*.
- $65^{\circ}50'$, None known, probably *pallida*, *brevis*, *arcuata*.
- $70^{\circ}35'$, None known, probably *pallida*, *brevis*, *placida*, *arcuata*.
- $70^{\circ}40'$, Known, *pallida*, *brevis*, *arcuata*; probably *placida*.
- $70^{\circ}45'$, None known, probably *pallida*, *brevis*, *placida*, *arcuata*.
- $70^{\circ}50'$, None known, probably *pallida*, *brevis*, *arcuata*.
- $75^{\circ}25'$, None known.
- $75^{\circ}30'$, None known; probably *arcuata*, *brevis*, *minima*.
- $75^{\circ}35'$, Known, *pallida*, *brevis*, *arcuata*; probably *minima*, *placida*.
- $75^{\circ}40'$, Known, *pallida*, *brevis*, *placida*, *arcuata*.
- $75^{\circ}45'$, None known; probably *pallida*, *brevis*, *placida*, *arcuata*.
- $75^{\circ}50'$, None known, probably *pallida*, *brevis*, *arcuata*.
- $80^{\circ}25'$, None known.
- $80^{\circ}30'$, Known, *arcuata*; probably *bryantae*, *brevariaria*, *exlinae*, *brevis*, *minima*.
- $80^{\circ}35'$, Known, *bryantae*, *brevariaria*, *exlinae*, *brevis*, *minima*, *arcuata*; probably *pallida*, *placida*.
- $80^{\circ}40'$, Known, *pallida*, *brevis*, *arcuata*; probably *placida*.
- $80^{\circ}45'$, None known; probably *pallida*, *brevis*, *placida*, *arcuata*.
- $80^{\circ}50'$, None known; probably *pallida*, *brevis*, *arcuata*.

- 85·25, None known.
- 85·30, Known, *arcuata*; probably *bryantae*, *breviaria*, *exlinae*, *minima*, *brevis*, *ludoviciana*.
- 85·35, Known, *brevis*; probably *pallida*, *bryantae*, *breviaria*, *exlinae*, *minima*, *ludoviciana*, *arcuata*.
- 85·40 Known, *arcuata*; probably *pallida*, *minnesota*, *brevis*.
- 85·45, None known; probably *pallida*, *minnesota*, *arcuata*, *brevis*.
- 85·50, None known; probably *pallida*, *arcuata*, *brevis*.
- 90·25, None known; probably *ludoviciana*.
- 90·30, Known, *ludoviciana*; probably *cavealis*, *arcuata*, *varians*.
- 90·35, Known, *ludoviciana*, *cavealis*, *arcuata*; probably *varians*.
- 90·40, Known, *minnesota*; probably *arcuata*, *itasca*.
- 90·45, Known, *minnesota*, *itasca*, *arcuata*.
- 90·50, None known; probably *arcuata*.
- 95·25, Known, *davisi*, *riogrande*, *rudimentops*, *minorata*, *nampa*, *microps*, *texana*; probably *varians*.
- 95·30, Known, *varians*, *davisi*, *buwata*, *texana*, *microps*; probably *ludoviciana*, *rudimentops*, *hexops*, *minorata*, *pampa*.
- 95·35, None known; probably *ludoviciana*, *varians*, *microps*.
- 95·40, None known; probably *minnesota*.
- 95·45, None known; probably *minnesota*.
- 95·50, None known.
- 100·25, None known; probably *varians*, *davisi*.
- 100·30, Known, *hexops*; probably *varians*, *davisi*, *microps*.
- 100·35, Known, *varians*, *colorada*, *microps*; probably *pagosa*, *altana*,
- 100·35, Known, *varians*, *colorada*, *microps*; probably *pagosa*, *altana*, *robusta*.
- 100·40, None known.
- 100·45, None known.
- 100·50, None known.
- 105·25, None known.
- 105·30, None known; probably *varians*, *utahana*, *arizona*.
- 105·35, Known, *pagosa*, *altana*, *deserticola*, *robusta*, *garrina*, *varians*; probably *utahana*, *arizona*.
- 105·40, Known, *robusta*; probably *pagosa*, *altana*, *deserticola*, *garrina*, *utahana*.
- 105·45, None known; probably *robusta*.
- 105·50, None known.
- 110·25, None known.
- 110·30, None known; probably *utahana*, *arizona*.
- 110·35, Known, *intermedia*, *deserticola*, *parma*, *robusta*, *garrina*, *arizona*, *utahana*.
- 110·40, Known, *intermedia*, *minnedoka*, *robusta*, *garrina*, *utahana*; probably *gertschi*, *rubra*, *deserticola*, *parma*, *simplex*.

- 110·45, Known, *idhoana*, *simplex*, *schultzi*, *gertschi*, *rubra*; probably *intermedia*, *robusta*.
 110·50, None known; probably *simplex*.
 115·25, None known.
 115·30, Known, *utahana*.
 115·35, Known, *nina*, *sierra*; probably *acuata*, *nevadensis*, *intermedia*, *parma*, *utahana*.
 115·40, Known, *simplex*, *intermedia*, *parma*; probably *nevadensis*, *sierra*, *minnedoka*, *utahana*.
 115·45, Known, *idahoana*, *simplex*; probably *intermedia*, *schultzi*.
 115·50, None known; probably *simplex*.
 120·30, None known.
 120·35, Known, *pacifica*, *tortuba*; probably *arcata*, *nina*, *nevadensis*, *sierra*, *shasta*.
 120·40, Known, *tersa*, *pusilla*, *arcata*, *jonesi*, *sierra*, *shasta*; probably *nevadensis*, *simplex*.
 120·45, Known, *tersa*, *pusilla*, *idahoana*, *simplex*, *tacoma*; probably *jonesi*.
 120·50, None known; probably *tersa*, *pusilla*, *simplex*.
 125·45, None known; probably *tersa*, *pusilla*, *idahoana*, *simplex*.
 125·50, None known; probably *tersa*, *pusilla*, *simplex*.
 130·50, None known; probably *tersa*, *pusilla*, *simplex*.

LIST OF SPECIES OF CICURINA

Subgenus CICURINA Sens. str.

Part A.

Division 1.

pallida Keyserling.

Part B.

Division 2.

bryantae Exline.

Part C.

Division 3.

breviaria Bishop and Crosby.

exlinae Chamberlin and Ivie, new species.

Division 4.

cicurea (Fabricius).

brevis (Emerton).

minima Chamberlin and Ivie, new species.

placida Banks.

minnesota Chamberlin and Ivie, new species.

Division 5.

tersa Simon.

Part D.

Division 6.

- pusilla* (Simon).
- nevadensis* Simon.
- arcata* Chamberlin and Ivie, new species.
- nina* Chamberlin and Ivie, new species.
- jonesi* Chamberlin and Ivie, new species.
- sierra* Chamberlin and Ivie, new species.

Subgenus CICURONA Chamberlin and Ivie, new.

Part A.

Division 1.

- pagosa* Chamberlin and Ivie, new species.

Part B.

Division 2.

- idahoana* Chamberlin.

Division 3.

- simplex* Simon.
- shasta* Chamberlin and Ivie, new species.

Subgenus CICURUSTA Chamberlin and Ivie, new.

Part A.

Division 1.

- altana* Chamberlin and Ivie, new species.

Division 2.

- intermedia* Chamberlin and Ivie.
- minnedoka* Chamberlin and Ivie, new species.
- schultzi* Exline.
- gertschi* Exline.
- rubra* Chamberlin and Ivie, new species.
- tacoma* Chamberlin and Ivie, new species.

Part B.

Division 3.

- pacifica* Chamberlin and Ivie, new species.
- ludoviciana* Simon.
- varians* Gertsch and Mulaik, new species.
- davisi* Exline.

Division 4.

- cavealis* Bishop and Crosby.
colorada Chamberlin and Ivie, new species.
itasca Chamberlin and Ivie, new species
arcuata Keyserling.
deserticola Chamberlin and Ivie, new species
parma Chamberlin and Ivie, new species
robusta Simon.
garrina Chamberlin.
tortuba Chamberlin and Ivie, new species.
utahana Chamberlin.
arizona Chamberlin and Ivie, new species.

Subgenus CICURATA Chamberlin and Ivie, new.

- burwata* Chamberlin and Ivie, new species.

Subgenus CICURELLA Chamberlin and Ivie, new.

Division 1.

- riogrande* Gertsch and Mulaik, new species.
rudimentops Chamberlin and Ivie, new species.

Division 2.

- microps* Chamberlin and Ivie, new species.
texana (Gertsch).
hexops Chamberlin and Ivie, new species.
pampa Chamberlin and Ivie, new species.
minorata (Gertsch and Davis).

A KEY TO THE SPECIES OF CIRCURINA

1. All eyes entirely absent (Cave in Texas).....*burwata*
 At least some of the eyes present..... 2
2. AM eyes absent or vestigial (Texas! Mexico?)..... 3
 AM eyes present..... 9
3. Eyes all very small and white, without black borders; length
 usually over 2.5 mm.....*microps*
 Eyes more or less normal, with at least some black on the
 borders; length usually under 2.5 mm..... 4
4. AM eyes rudimentary; AS eyes two diameters apart.....*rudimentops*
 AM eyes completely absent; AS eyes usually about one
 diameter apart 5
5. Length under 2.00 mm.....*minorata*
 Length over 2. mm..... 6
6. Males 7
 Females 8

7. The slender hook piece of the conductor of the palpus longer than the tibia plus the tibial process.....*texana*
 The hook piece of the conductor shorter than the tibia plus the tibial process.....*hexops*
8. Epigynal opening much wider than the transverse diameter of the large sac of the spermathecum; small sac very small, not rounded.....*texana*
 Epigynal opening not wider than the transverse diameter of the large sac of the spermathecum; small sac well developed, rounded*pampa*
9. Spine A present on tibia IV (dorsal-median-middle)..... 10
 Spine A absent from tibia IV..... 13
10. Spines B and C also present on tibia IV (dorsal-lateral-middle pair); epigynum with two openings; tibial process of male palpus very short (Eastern U. S.).....*pallida*
 Spines B and C absent from tibia IV; epigynum with a single opening (Northwest U. S., British Columbia)..... 11
11. AM eyes larger than the other eyes (Northern California).....*shasta*
 AM eyes not larger than the others..... 12
12. Epigynum as in fig. 29; palpus as in fig. 79.....*simplex*
 Epigynum as in fig. 30 palpus as in fig. 78.....*idahoana*
13. Spine 8 present on tibia I (4 spines on anterior face besides the ventral spines); spines on leg I long and overlapping; abdomen unmarked (Eastern U. S.).....*bryantae*
 Spine 8 absent from tibia I (2 or 3 spines on anterior face).... 14
14. AM eyes very small, less than one-half diameter of AS eyes..... 15
 AM eyes at least one-half diameter of AS eyes..... 21
15. Length more than 4 mm..... 16
 Length less than 4 mm..... 18
16. Epigynum of type shown in figs. 14 and 15; palpus of type shown in figs. 66 and 67 (North Carolina and Tennessee)..... 17
 Epigynum of type shown in fig. 56; palpus of type shown in fig. 88 (Western U. S.).....*utahana*
17. Canal of epigynum not extending beyond the anterior end of the spermathecum, less contorted.....*breviarina*
 Canal of epigynum extending slightly beyond anterior end of the spermathecum, more contorted.....*exlinae*
18. Spines B and C present on tibia IV; epigynum with a broad slit-like opening; connecting canal short (Southern Texas)*riogrande*
 Spines B and C absent from tibia IV; epigynum with an oval opening; connecting canal long and winding..... 19
19. Abdomen dark grey with light markings (Oregon).....*jonesi*
 Abdomen pale gray with or without darker shadings..... 20
20. Epigynum as in fig. 35 (Montana).....*schultzi*
 Epigynum as in fig. 48 (Minnesota).....*itasca*

21.	Spine A present on metatarsus IV (dorsal-median-basal).....	22
	(Western U. S.).....	
	Spine A absent from metatarsus IV.....	23
22.	AM eyes as large as or larger than the PM eyes; length of carapace over 3.5 mm.....	<i>parma</i>
	AM eyes smaller than the PM eyes; length of carapace under 3.5 mm.	<i>deserticola</i>
23.	Spine 7 and 2 both present on metatarsus IV.....	24
	Spine 7 (or 2) absent from metatarsus IV.....	27
24.	Spines 11 and 14 absent from legs I and II.....	<i>altana</i>
	Spines 11 and 14 present on legs I and II.....	25
25.	Section C of connecting canal (see fig. 10) without an anterior loop (California).....	<i>tortuba</i>
	Section C of connecting canal looped anteriorly.....	26
26.	Abdomen with color markings, sometimes very faint and only near spinnerets (Utah, high mountains).....	<i>garrina</i>
	Abdomen immaculate (Rocky Mountain area).....	<i>robusta</i>
27.	Spines 11 and 14 (distal ventral pair) on tibiae I and II all present and normal.....	28
	Spines 11 and 14 absent, very small, or partly absent from tibiae I and II.....	40
28.	Spine 15 (distal-median-ventral) present on metatarsus I.....	29
	Spine 15 absent from metatarsus I.....	34
29.	AM eyes as large as the PM eyes; length over 8 mm. (South central U. S.).....	<i>ludoviciana</i>
	AM eyes smaller than PM eyes.....	30
30.	Spine 10 present on tibia II (ventral-anterior-middle).....	31
	Spine 10 absent from tibia II.....	32
31.	AM eyes much smaller than PM eyes; length usually 5 to 7 mm.; height of clypeus about one diameter of an AS eye; opening of epigynum on posterior margin of epigynal plate (Missouri, Arkansas).....	<i>cavealis</i>
	AM eyes only a little smaller than the PM eyes; length usually 7 to 9 mm.; height of clypeus usually more than one diameter of an AS eye; opening of epigynum small, placed anteriorly from margin of plate (Texas).....	<i>varians</i>
32.	Length over 6 mm.; height of clypeus usually more than one diameter of an AS eye; hook of conductor of palpus large (Texas, etc.)	<i>varians</i>
	Length under 6 mm.....	33
33.	Height of clypeus greater than the diameter of the AS eye; conductor of palpus slender just above hook; hook strong (Southwestern U. S.).....	<i>utahana</i> (<i>arizona</i>)
	Height of clypeus usually less than one diameter of an AS eye; conductor of palpus expanded broadly just above the hook; hook short and weak (Texas).....	<i>davisi</i>

34. AM eyes largest of all; abdomen with distinct color markings
(Northern U. S.).....*placida*
AM eyes smaller than the others; abdomen without distinct
color markings..... 35
35. Spine 10 present on tibia II (ventral-anterior-middle) (Mis-
souri, Arkansas)*cavealis*
Spine 10 absent from tibia II..... 36
36. Length over 6.50 mm..... 37
Length under 6.50 mm..... 38
37. Spine 5 absent from tibia I of female (basal-anterior-dorsal)
(California)*pacifica*
Spine 5 present on tibia I of female (Arizona, New Mexico).....*arizona*
38. Spine 12 usually absent on tibia IV (ventral-basal-pos-
terior); height of clypeus less than a diameter of an AS
eye (Texas)*davisi*
Spine 12 usually present on tibia IV; height of clypeus a full
diameter of an AS eye or more (Southwestern U. S.)..... 39
39. Epigynum usually with a large anterior loop in section C
of the connecting canal (see fig. 56); spine 5 usually
missing from tibia I of female.....*utahana*
Epigynum with little or no loop in section C of the con-
necting canal; spine 5 usually present on tibia I of the
female*arizona*
40. Abdomen with color markings or shadings (markings some-
times much faded)..... 41
Abdomen immaculate 69
41. Spine I absent from metatarsus III (dorsal-posterior-basal).... 42
Spine I present on metatarsus III..... 46
42. Epigynum of type shown in fig. 25, palpus of type shown in
fig. 74 (Western U. S.)..... 48
Epigynum and palpus otherwise..... 43
43. Length more than 4.0 mm.; eye area occupying only slightly
more than half the width of the head (Western U. S.)..... 44
Length not more than 4.0 mm.; eye area occupying about
two-thirds the width of the head (Eastern U. S.)..... 45
44. Epigynum as in fig. 36; palpus probably similar to fig. 77
(Montana)*gertschi*
Epigynum as in fig. 49; palpus probably similar to fig.
47 (Colorado)*colorada*
45. Average size smaller (average length about 2.75 mm.);
palpus shorter; epigynum shorter.....*minima*
Average size larger (average about 3.50 mm.); palpus longer;
epigynum longer*brevis*
46. PM eyes more than a diameter from the PS eyes; length
about 8.0 mm.; clypeus much higher than the diameter of
an AS eye; epigynum with a large bulb at junction of
connecting canal with bursa (Colorado).....*pagosa*
PM eyes usually not more than a diameter from the PS eyes;
length usually less than 8.0 mm.; clypeus seldom more than
one diameter of an AS eye..... 47

47. Epigynum with a single simple spermathecum; embolus of palpus not fitting into a groove which follows across, or around the tip of the cymbium on the under side..... 48
 Epigynum with a double spermathecum; embolus of palpus fitting into a small groove which follows across, or around tip of cymbium on under side..... 59
48. Epigynum with a loop of the connecting canal extending anteriorly on the ectal side (similar to loop in section C, fig. 10); palpus with tibial process much more than half the length of the cymbium (Western U. S.)..... 49
 Epigynum without an ectal loop of the connecting canal; tibial process of palpus not much more than half the length of the cymbium, if that long..... 54
49. Abdomen light, with only faint markings, if any (California).....*sierra*
 Abdomen dark gray with light markings..... 50
50. Palpus of male with the dorsal margin of the tibial process broadly folded over on the basal half (epigynum of female with an ectal loop in the connecting canal)..... 51
 Palpus of male with the dorsal margin of the tibial process narrowly folded over along entire length; (epigynum of female without an ectal loop) (Pacific northwest).....*pusilla*
51. Length 5.0 mm. or more (California, Nevada)..... 52
 Length 4.0 mm. or less (Oregon).....*jonesi*
52. AM eyes as large as the PM eyes (Nevada).....*nevadensis*
 AM eyes smaller than the PM eyes..... 53
53. Larger (length about 6.0 mm.); a small extra spine on femora of legs, I, II, and III on dorso-anterior side near middle; height of the clypeus less than the diameter of an AS eye (Northern California).....*arcata*
 Smaller (length about 5.25 mm.); no extra spines on femora; height of clypeus a full diameter of an AS eye (Central California)*nina*
54. Males 55
 Females 56
55. AM eyes larger than any of the others (Northeastern U. S.).....*placida*
 AM eyes about equal to the PM eyes (Minnesota).....*minnesota*
 AM eyes much smaller than the PM eyes (Pacific Northwest)*tersa*
56. Connecting canal of epigynum makes one or two large loops anteriorly after first reaching the posterior part of the epigynum, but not tight coils or bends just before entering spermathecum (Pacific northwest)..... 57
 Connecting canal of epigynum makes no large loops anteriorly, but makes several tight coils or bends just before entering the spermathecum (East and central U. S.)..... 58
57. Venter dusky; epigynum with only one forward loop of the connecting canal after it first extends posteriorly.....*tersa*
 Venter pale; apigynum with two forward loops of the connecting canal, after the first descending branch.....*pusilla*

58. AM eyes much larger than the PM eyes; length about 5 to 6 mm. (Northeastern U. S.).....*placida*
 AM eyes about equal to PM eyes; length usually over 4.5 mm. (Minnesota).....*minnesota*
 AM eyes smaller than the PM eyes; length seldom over 4.0 mm. (Eastern U. S.).....*brevis*
59. Length less than 5.0 mm..... 60
 Length 5.0 mm. or more..... 65
60. Connecting canal of epigynum short, as in fig. 31 (Western U. S.)..... 61
 Connecting canal of epigynum long, as in fig. 46 (Eastern and central U. S.)..... 64
61. Color markings on the abdomen faint..... 62
 Color markings on abdomen fairly distinct..... 63
62. Length less than 4.0 mm. (Montana).....*schultzi*
 Length over 4.0 mm. (Utah; Idaho).....*intermedia*
63. Spines 9 and 10 present on tibia II, although small (ventral-anterior-basal and middle) (Washington).....*tacoma*
 Spines 9 and 10 absent from tibia II (Montana).....*gertschi*
64. Epigynum with a large anterior loop in section C of the connecting canal; length rarely less than 4.0 mm.....*arcuata*
 Epigynum without a large anterior loop in section C of the connecting canal; length under 4.0 mm.....*itasca*
65. Connecting canal of epigynum long as in fig. 46; palpus with a semi-circular 'twist' in dorsal fold of tibial process (Eastern and central U. S.).....*arcuata*
 Connecting canal short as in fig. 31; palpus without a semi-circular 'twist' in the dorsal fold of the tibial process (Western U. S.)..... 66
66. PM eyes of female 2 diameters apart; carapace dark reddish brown (Montana).....*rubra*
 PM eyes less than 2 diameters apart; carapace light orange brown or yellowish..... 67
67. Markings on abdomen faint (Utah; Idaho)..... 68
 Markings on abdomen fairly distinct (Montana).....*gertschi*
68. Space between bursae of epigynum, anterior to atrium, much wider than long (Southern Idaho).....*minnedoka*
 Space between the bursae of the epigynum, anterior to the atrium, longer than wide, or at least as long as wide.....*intermedia*
69. Clypeus less than a diameter of an AS eye..... 70
 Clypeus a full diameter of a AS eye or more..... 75
70. Epigynum with a single spermathecum; connecting canal long, with a lateral loop (see fig. 26); palpus of male as shown in fig. 75 (California).....*sierra*
 Epigynum with a double spermathecum or very different from fig. 26; palpus different..... 71

71. Spine 1 absent from metatarsus IV (dorsal-basal-posterior);
PM eyes seldom more than a diameter apart (Eastern
U. S.) *brevis*
Spine 1 present on metatarsus IV; PM eyes usually more
than a diameter apart..... 72
72. Length less than 4.0..... 73
Length more than 4.0 mm..... 74
73. Connecting canal of epigynum short (see fig. 35) (Montana)..... *schultzi*
Connecting canal of the epigynum long (see fig. 48) (Minne-
sota) *itasca*
74. Epigynum of type shown in fig. 41; palpus of type shown in
fig. 83; PM eyes less than one and one-half diameters apart
(Texas, Missouri, Arkansas)..... 79
Epigynum as shown in figs. 31 to 34; palpus as shown in fig.
77 (Utah; Idaho)..... *intermedia*
75. Females 76
Males 80
76. AM eyes nearly or fully as large as the AS eyes spermathe-
cum single (Europe)..... *cicurea*
AM eyes much smaller than the AS eyes; spermathecum
double (North America)..... 77
77. Epigynum of type shown in fig. 41..... 78
Epigynum of type shown in fig. 39. Return to..... 68
Epigynum of type shown in fig. 26..... *sierra*
78. PM eyes nearly two diameters apart (Arizona; New Mexico)..... *arizona*
(*C. utahana* may also occasionally fall out here..... *utahana*)
79. Length rarely over 5.5 mm.; height of clypeus less than a
diameter of an AS eye; opening of epigynum anterior
from the posterior edge of the epigynal plate (Texas)..... *davisi*
Length usually over 5.5 mm.; height of clypeus about one
diameter of an AS eye; opening of epigynum extending
to the posterior edge of the epigynal plate (Missouri;
Arkansas) *cavealis*
80. Dorsal fold of the tibial process of palpus with a semi-circu-
lar 'twist' as shown in fig. 86..... 81
Dorsal fold of the tibial process without a 'twist'..... 82
81. Hook of conductor of the palpus uncate and slender as in
fig. 86 (Missouri; Arkansas)..... *cavealis*
Hook of conductor short and weak, as in fig. 83 (Texas)..... *davisi*
Hook of conductor probably as in fig. 89 (Southwestern U. S.)..... *arizona*
82. Hook of conductor long and uncate..... 83
Hook of conductor short, and not distinctly uncate (Utah;
Idaho) *intermedia*
(*minnedoka*)
83. AM eyes as large as the AS eyes or nearly so (Europe)..... *cicurea*
AM eyes much smaller than the AS eyes (California)..... *sierra*

Subgenus CICURINA sens. str.

Color: Wide variation in color, ranging from species in which the cephalothorax and legs are light yellowish and the abdomen is pale gray without markings to species, on the other extreme, which have the cephalothorax and legs dusky brown and the abdomen black with whitish markings. Most species are intermediate, with the abdomen light gray marked with darker gray.

Structure: The head is usually narrower than the average for the genus. The eyes rather large; the eye area usually occupying more than half the width of the head, more often about two-thirds. The eyes are 8 in number; the AM eyes vary from very small to very large. The posterior eye row is usually straight or slightly recurved; the PM eyes about a diameter or a little less apart, slightly closer to the side eyes. Height of clypeus seldom more than one diameter of an AS eye.

Chelicerae slightly to moderately geniculate, seldom strongly geniculate. Teeth on hind margin of fang groove usually typical. Sternum, labium, and endites about average. Abdomen tends to be moderately large and full; not so slender as in most of the other groups.

The male palpus shows a wide range of variation; its most distinctive features being the long curved hook of the conductor, and the absence of any distinct groove in the cymbium into which the embolus might fit. Legs of about average size; the spines usually showing the following modifications from the typical formula:

I: F — 3; T — 11, 14.

II: F — 3; T — 11, 14, + 9, 10 (weak); M + 5.

III: F — 3; M ± 1.

IV: F — 3; T ± 12.

Epigynum usually with an oval or kidney-shaped opening; rather large in size; atrium not well developed as a distinct chamber; bursa typical. The connecting canal is simple, varying in length from very short to very long, folded and twisted in various ways. The spermathecum is a simple sac, usually large, with the connecting canal entering at the posterior end, the fertilization duct leaving near the point where the connecting canal enters (see fig. 8).

Distribution: Most of the species prefer damp wooded areas, living on the ground under logs, leaves, rocks, etc. They range throughout the eastern U. S. and Canada, across the northern part of the continent into the Pacific northwest, and south along the mountains into southern California; also found in Europe. Adults may be procured at almost any time of the year.

Classification: This subgenus is divided into four primary parts and six secondary divisions. These may be characterized thus:

PART A AND DIVISION 1. Color pale yellowish without color markings. Palpus of male short, with a very short tibial process. Epigynum of female with two distinct openings; the atrium not developed; connecting canal short and simple. Leg IV with spines A, B, and C present on the tibia.

PART B AND DIVISION 2. Abdomen without color markings. Epigynum with a typical opening; spermathecum large; connecting canal very short and simple. Tibia I with spine 8 present, making four spines on the anterior face besides the ventral spines.

PART C. Abdomen usually with color markings. Eye area usually occupying much more than one-half the width of the head; sizes variable. Male palpus with the tibial process small or medium in size; ventral excavation not extending the tip of cymbium; embolus short. Epigynum with a single opening; the connecting canal moderately short, folded or twisted in part.

DIVISION 3. Head arched more than usual back of the eye area. AM eyes very small, less than half of the diameter of the AS eyes. Sibial process male palpus short and emarginate at distal end. Epigynum with the distal part of the connecting canal (nearest spermathecum) tightly folded or twisted.

DIVISION 4. Eyes variable in size. Palpus of male with the tibial process rather slender and pointed, extending about half way to the tip of the cymbium. Epigynum with the distal end of the connecting canal tightly folded or twisted.

DIVISION 5. Eyes large and occupying much more than half the width of the head. Palpus as in division 4. The connecting canal of the epigynum makes one large fold anteriorly, but no tight folds or twists.

PART D AND DIVISION 6. Color usually dark. The tibial process of the male palpus is large and broad, extending nearly to the distal end of the cymbium; ventral side of the cymbium excavated to the tip; embolus very long and slender, following around edge of cymbium to the tip. Epigynum with a large opening, partially divided by a small extension from the anterior broader; connecting canal very long and much folded (the pattern closely paralleling that of *robusta* and other species of the subgenus *Cicurusta*).

Cicurina pallida Keyserling

Pl. III, fig. 13; Pl. IX, fig. 65

Cicurina pallida Keyserling, 1887. Verh. zool.-bot. Ges. Wien, 37:462; Pl. 6, f. 26.

Cicurina pallida Keys., Emerton, 1909. Trans. Connecticut Acad. Arts and Sci., 14:221; Pl. 8, f. 7.

Cicurina pallida Keys., Exline, 1936. Amer. Mus. Novitates, No. 50:7; f. 12.

Color: Carapace orange yellow, with the back part of the head area light yellow. Chelicerae orange. Labium and endites orange with

pale tips. Sternum bright yellow, becoming orange on the margin. Legs orange yellow. Abdomen pale yellowish gray to grayish white, without markings.

Structure: Carapace essentially typical; head arched back of the eyes. Height of clypeus $1\frac{1}{3}$ to $1\frac{1}{2}$ diameters of an AS eye. AM eyes slightly smaller than PM eyes. Anterior row straight or slightly procurved; AM eyes about a radius apart, closer to the side eyes. Posterior eye row straight; eyes equidistant, about a diameter of a PM eye apart. Chelicerae only slightly geniculate; teeth on hind margin of fang groove usually typical, but minor variations common. Spines of the legs vary from the typical formula thus:

I: T \pm 11 (small), — 14.

II: T + 9, 10, \pm 14 (9, 10, 11, 14 weak); M + 5.

III: T \pm 12.

IV: T — 12, + A, B, C.

Epigynum distinct in having two openings; the atrium not developed. Palpus of male small; tibial process very short.

Measurements:	Females (3)		
	AVERAGE	EXTREMES	RATIO
Length	4.90 mm.	4.60 - 5.35	202
Carapace:			
Length	2.43	2.15 - 2.73	100
Width	1.63	1.52 - 1.80	68
Tibia-patella:			
I	2.23	2.05 - 2.48	92
IV	2.47	2.22 - 2.75	102
	Males (4)		
Length	4.88 mm.	4.50 - 5.30	204
Carapace:			
Length	2.39	2.30 - 2.53	100
Width	1.74	1.60 - 1.90	73
Tibia-patella:			
I	2.30	2.17 - 2.50	96
IV	2.61	2.40 - 2.77	109

Distribution:

Type locality: Washington, D. C. (aW77°0':N38°55').

Probable range: From 38° to 55° north latitude, and east of 87° west longitude to the Atlantic.

Known localities:

71·42	R	(Sharon, Mass. Emerton).
*71·44	!	(Randolph, New Hampshire).
72·44	R	(Northfield, Mass. Emerton).
73·40	R	(Alpine N. J.; Sea Cliff, N. Y. Exline).
73·44	R	(Essex Co., N. Y., Exline).
75·43	!	(Lewis Co., N. Y.).
76·41	R	(Bloomsberg, Pa., Exline).
76·42	!	(Ithaca, N. Y.)
77 38	R	(Washington, D. C. Type locality).
*77·40	!	(New Bloomfield, Pa.).
83·42	R	(Ann Arbor, Michigan, Exline).
Indiana	R	(Petrunkevitch, 1911. Catalogue).

Cicurina bryantae Exline

Pl. III, fig. 12

Cicurina bryantae Exline, 1936. Amer. Mus. Novitates, No. 850:13; figs. 4, 14.

Color: Carapace, legs, and sternum orange brown. Mouthparts reddish orange. Abdomen pale gray, without markings.

Structure: Female. General structure more robust than usual for this genus. Head arched back of eye area. Height of clypeus equal to or a little more than one diameter of an AS eye. Eye area occupying much more than one-half the width of the head. AM eyes much smaller than the PM eyes. Anterior eye row nearly straight; AM eyes about two-thirds of a diameter apart, about a radius from the side eyes. Posterior eye row straight or slightly recurved; PM eyes about a diameter apart, about same distance from the side eyes. Chelicerae moderately geniculate; frontal spines large, crossed; teeth on hind margin of fang groove typical. Sternum wide and short, as wide as long. Legs stout; tibia-patella I equal to or slightly longer than tibia-patella IV; spines typical, except as follows:

I: T 11 and 14 small, + 8; M+ 5, 6.

II: T + 9, 10 (small), 11 and 14 small; M + 5.

III: T — 12.

IV: T — 12.

Spines of legs I and II very long; spines on legs III and IV much smaller. A row of stout, almost spine-like setae on underside of femora I and II. Differs from all other known species of *Cicurina* in having four spines on anterior face of tibia I. Abdomen rounder than usual. Spinnerets slender, close together. Epigynum very simple.

Male unknown.

Measurements:	Females (2)		AVERAGE	RATIO
	1	2		
Length	4:00 mm.	4.75 mm.	4.37	211
Carapace:				
Length	2.00	2.15	2.07	100
Width	1.57	1.67	1.62	78
Tibia-patella:				
I	1.90	2.15	2.02	98
IV	1.90	2.10	2.00	97

Distribution:

Type locality: Newfound Gap, near Cherokee, North Carolina (about W83°19':N35°30'). Female holotype (M. C. Z.).

Probable range: Mountains within area between about 80° and 87° west longitude, and 30° and 38° north latitude, chiefly the Great Smoky Mountains.

Known localities:

- *82·36 ! (Erwin, Tenn., female, July 8, 1933. W. Ivie).
 83·35 ! (Type locality, Exline; Little Pigeon Creek, Great Smoky Mts., July 9, 1933, female, W. Ivie).

***Cicurina breviararia* Bishop and Crosby**

Pl. III, fig. 15; Pl. IX, figs. 66-67

Cicurina breviararia Bishop and Crosby, 1926, Journ. Elisha Mitchell Sci. Soc., 41, 196; figs. 44, 45.

Cicurina breviararia B. and C., Exline, 1936, Amer. Mus. Novitates, No. 850:9.

Color: Carapace light orange to light brown marked with gray or dusky. Chelicerae orange red. Labium and endites reddish orange, with pale tips. Sternum orange to yellow, shaded with dusky. Legs orange yellow to brown, not noticeably darker beyond patellae. Abdomen gray above with pale gray markings, consisting of: a pair of indistinct sub-basal spots, three large chevron-like marks on basal half, these extending down sides in a series of spots. Venter light gray.

Structure: Carapace distinctly arched on cephalic part. Eye area occupying a little more than half the width of the head. Height of clypeus equal to one diameter of an AS eye. AM eyes very small, much less than one-half diameter of an AS eye. Anterior eye row slightly procurved; AM eyes scarcely a diameter apart, very close to the side eyes. Posterior row faintly recurved; PM eyes about three-quarters of a diameter apart, a radius from the side eyes. Chelicerae only slightly geniculate; hind margin of fang groove with a small spur;

three teeth, and four slender denticles. Legs moderately stout; spines typical, except as follows:

I: T — 11, 14.

II: T + 9, 10 (weak), — 11, 14; M + 5.

III: M \mp 1.

IV: T — 12.

Abdomen moderatey full. Epigynum darker and broader than in *brevis*.

Measurements:	Female (2)		AVERAGE	RATIO
	1	2		
Length	4.20	4.20	4.20	204
Carapace:				
Length	2.00	2.12	2.06	100
Width	1.42	1.45	1.43	69
Tibia-patella:				
I	1.85	1.86	1.85	90
IV	1.95	1.97	1.85	90

Distribution:

Type locality: Grandfather Mt., North Carolina (about W81°45': N36°8'), male holotype (Cornell University).

Probable range: Mountains within area between 80° and 86° west longitude, and between 35° and 38° north latitude, especially in the Great Smoky Mountains.

Known localities:

- 81·36 R (Type locality, Bishop and Crosby).
 * ! (Mount Pisgah, North Carolina, female).
 * ! (Mount Leconte, North Carolina, female).

Cicurina exlinae Chamberlin and Ivie, n. sp.

Pl. III, fig. 14

Cicurina atomaria, Exline, 1936. Amer. Mus. Novitates, No. 850:13; fig. 18.
 (Not *C. atomaria* Simon, 1898.)

Color: Carapace yellow to light brown, with some faint dusky shadings, but no distinct markings. Chelicerae orange to light reddish brown, with pale tips. Labium and endites orange with light tips. Sternum yellowish to orange, with more or less tint of dusky. Legs yellowish to orange brown, not noticeably darker beyond the patellae. Abdomen varies from a pale gray with a diffuse median basal stripe and three or four chevrons to a darker color very similar to that of *breviaria*.

Structure: Very similar to *breviaria*. The epigynum has the connecting canals less coiled near the posterior part. Metatarsus III usually has spine 1 present.

Male unknown.

Measurements:	Females (10)		
	AVERAGE	EXTREMES	RATIO
Length	4.14	3.50 - 4.60	209
Carapace:			
Length	1.98	1.82 - 2.20	100
Width	1.37	1.25 - 1.53	69
Tibia-patella:			
I	1.77	1.55 - 1.90	89
IV	1.91	1.70 - 2.12	96

Distribution:

Type locality: Frying Pan Gap, Mt. Pisgah, North Carolina. Female holotype.

Probable range: Mountains within area between 80° and 86° west longitude, and between 35° and 38° north latitude, especially in the Great Smoky Mountains.

Known localities:

- 82·36 ! (Erwin, Tennessee).
 83·35 ! (Great Smoky Mts., Tenn.; Macon Co., N. C.).
 ! (Mt. Leconte, Tennessee).

Cicurina cicurea (Fabricius)

Pl. III, fig. 21; Pl. IX, fig. 68

Aranea cicurea Fabricius, 1793. Entomologia Systematica, 2:410.

Cicurina cicurea (Fabr.), Exline, 1936. Amer. Mus. Novitates, No. 850:2; figs. 2, 7, 16.

Color: Carapace orange. Chelicerae reddish orange. Labium and endites a lighter reddish orange with pale tips. Sternum orange. Legs orange, with distal segments darker and more brownish. Abdomen pale gray without markings.

Structure: Carapace moderately high; cervical indentations moderately deep. Height of clypeus equal to or a little more than the diameter of an AS eye. Eye area occupying a little more than half the width of the head. AM eyes as large as or slightly larger than the PM eyes. Anterior eye row procurved; AM eyes slightly more than a radius apart, a little closer to the side eyes. Posterior row straight; PM eyes about 1½ diameter apart, a full diameter or more from the side eyes. Median ocular area only slightly wider behind than in front.

Chelicerae geniculate in front; frontal spines normal; teeth on hind margin of fang groove typical. Legs typical; spines typical, with the following exceptions:

I: F — 5; T — 11, 14.

II: T \pm 11, — 14, + 9, 10 (small); M + 5.

III: T \pm 12.

IV: T \pm 12.

Abdomen moderately full. Spinnerets typical.

Measurements:	Females (2)			
	1	2	AVERAGE	RATIO
Length	6.00 mm.	6.70 mm.	6.35	224
Carapace:				
Length	2.67	3.00	2.83	100
Width	1.93	2.07	2.00	71
Tibia-patellae:				
I	2.66	2.87	2.76	98
IV	2.85	3.10	2.97	105
	Males (2)			
	1	2	AVERAGE	RATIO
Length	5.20mm.	5.80 mm.	5.50	209
Carapace:				
Length	2.60	2.67	2.63	100
Width	2.03	2.02	2.02	77
Tibia-patella:				
I	2.55	2.62	2.58	98
IV	2.80	2.90	2.85	108

Distribution:

Range: Europe.

Cicurina brevis (Emerton)

Pl. III, figs. 16-17; Pl. IX, fig. 69

Tegenaria brevis Emerton, 1889. Trans. Conn. Acad. Sci., 8:30; Pl. 8, f. 5.

Cicurina creber Banks, 1892. Proc. Acad. Philadelphia, p. 28; Pl. 1, f. 76.

Cicurina brevis (Emerton). Banks, 1907. Rep. St. Geol. Indiana, p. 738.

C. brevis (Em.). Emerton, 1909. Trans. Conn. Acad. Sci., 14:221; Pl. 8, f. 6.

C. brevis (Em.). Petrunkevitch, 1911. Catalogue, p. 530.

C. brevis (Em.). Exline, 1936. Amer. Mus. Novitates, No. 850:8; figs. 3, 5, 13a-d.

Color: Cephalothorax and legs orange yellow; mouthparts a darker orange than the rest; sternum yellow. Abdomen grayish white, marked with dark gray, thus: median basal mark, followed behind by

three or four pairs of large spots; sides, venter, and area around spinnerets more or less spotted and streaked. The dark markings on abdomen often faded or reduced, sometimes entirely absent. Legs not noticeably darker distally.

Structure: Height of clypeus less than one diameter of an AS eye. Eye area occupying more than one-half width of the head. Anterior eye row procurved; AM eyes less than a radius apart, subcontiguous with the side eyes. Posterior eye row straight; PM eyes about one diameter apart, much closer to the side eyes. AM eyes smaller than the PM eyes. Chelicerae slightly to moderately geniculate; teeth on hind margin of fang groove typical. Legs typical; spines vary from typical thus:

I: T — 11, 14.

II: T — 11, 14, + 9, 10 (weak); M + 5.

III: T \pm 12, (usually absent on females, always present on males),
11 and 14 may be weak; M — 1 (rarely present).

IV: T — 12.

Abdomen typical. Spinnerets typical. Epigynum with a large posterior opening; the two large dark spermatheca appearing through the chitin as thick parallel bars.

Measurements:	Females (34)		
	AVERAGE	EXTREMES	RATIO
Length	3.36 mm.	2.85 - 4.10	214
Carapace:			
Length	1.57	1.35 - 1.75	100
Width	1.11	.93 - 1.25	71
Tibia-patella:			
I	1.39	1.17 - 1.60	89
IV	1.51	1.25 - 1.75	96
Males (17)			
Length	3.50 mm.	3.20 - 4.00	197
Carapace:			
Length	1.78	1.63 - 1.95	100
Width	1.44	1.27 - 1.53	81
Tibia-patella:			
I	1.64	1.53 - 1.75	92
IV	1.77	1.63 - 1.90	100

Distribution:

Type locality: Mt. Washington, New Hampshire (W71°19': N44°16'). Types in M. C. Z.

Probable range: Eastern U. S. and Canada, between 30° and 55° north latitude and from 87° west longitude east to the Atlantic.

Known localities:

- 71·42 R (Sharon, Mass., Emerton).
- 71·44 ! (Type locality; Franconia Notch, New Hampshire).
- 72·41 R (New Haven, Conn., Emerton).
- 72·42 R (Northfield, Mass., Emerton).
- *73·41 ! (Mt. McIntyre, N. Y.; Norwalk, Conn.; etc.).
- *73·43 ! (Brant Lake, N. Y.).
- *73·44 ! (Essex Co., N. Y.).
- 74·41 R (Near Slootsburg, N. Y., Exline).
- *74·44 ! (Adirondacks, N. Y.).
- *75·43 ! (Lewis Co., N. Y.).
- 76·42 ! (Ithaca, N. Y. (Type locality of *C. creber* Banks 3); many other localities).
- 77·38 R (Falls Church, Va., Exline).
- *77·40 ! (Plotters Mill, Pa.).
- 80·40 R (Salineville, Ohio, Exline).
- 82·35 R (Mt. Mitchell, N. C., Exline).
- *83·35 ! (Little Pigeon Cr., Great Smoky Mts., Tenn.).
- *84·35 ! (Rockwood, Tenn.).
- *85·36 ! (Crossville, Tenn.).
- R Gaspe, Canada, Emerton.
- R Montfort, Quebec, Emerton.

Color: Cephalothorax and legs orange yellow, chelicerae slightly darker, sternum paler. Abdomen whitish gray with dark gray markings above, consisting of a median basal band, with a large spot on either side, and a series of paired spots on the posterior half—these spots sometimes joined transversely. Smaller spots sometimes present on sides and around spinnerets.

Structure: Carapace rather slender. Eye area occupying much more than half the width of the head. Height of the clypeus equal to a diameter of an AS eye. Anterior eye row procurved; AM eyes smaller than the PM eyes, less than a radius apart, subcontiguous with the AS eyes. Posterior row straight; PM eyes a diameter apart, much closer to the side eyes. Chelicerae vertical, only slightly convex at base in front; frontal spines typical; teeth on hind margin of the fang groove typical. Sternum only slightly longer than wide. Tibia and patella of leg IV usually shorter than the carapace in the female, about equal in the male; spines vary from the typical thus:

I: T — 11, 14.

II: T — 11, 14, + 9, 10 (weak); M + 5.

III: T — 12; M — 1. (T 12 present in male.)

IV: F — 6; T — 12.

Abdomen typical. Spinnerets short. Epigynum as in *brevis*, except spermathecae shorter.

Male. Structure with typical male modification. Chelicerae vertical, straight in front, slender; tips resting between the widely separated tips of the endites. Sternum as wide as long. Palpus similar to that of *brevis*, with the cymbium noticeably shorter.

Measurements:	Females (5)		
	AVERAGE	EXTREMES	RATIO
Length	2.80 mm.	2.50 - 2.90	215
Carapace:			
Length	1.30	1.25 - 1.32	100
Width .....	.91	.85 - .96	70
Sibia-patella:			
I	1.12	1.05 - 1.19	86
IV	1.18	1.10 - 1.25	91
	Males (5)		
Length	2.74 mm.	2.60 - 2.85	196
Carapace:			
Length	1.40	1.33 - 1.48	100
Width	1.15	1.11 - 1.20	82
Tibia-patella:			
I	1.24	1.18 - 1.30	89
IV	1.36	1.28 - 1.47	99

Distribution:

Type locality: Mt. Pisgah, North Carolina (about W82°:N35°).

Probable range: Southeastern U. S., between 30° and 40° north latitude, and east of 88° west longitude.

Known localities:

- *82·35 ! (Type locality).
- *83·35 ! (Little Pigeon Creek, Great Smoky Mts., Tenn.).
- *84·35 ! (Harriman, Tenn.; Kingston, Tenn.).
- *85·36 ! (Crossville, Tennessee).
- *86·34 ! (Monte Sano, Alabama).

Cicurina placida Banks

Pl. III, fig. 20; Pl. IX, fig. 71

Cicurina placida Banks, 1892. Proc. Acad. Philadelphia, p. 27; Pl. 1, f. 77.

Cicurina placida Banks, Petrunkevitch, 1911. Catalogue, p. 530.

Cicurina placida Banks, Exline, 1936. American Mus. Novitates, No. 850:10; figs. 1, 9, 11.

Color: Carapace orange brown. Chelicerae reddish brown. Labium and endites light reddish brown. Sternum dark orange, shaded

darker around border. Legs light orange brown basally, darker beyond patellae. Abdomen pale gray, with dark gray markings, consisting of: median basal band, pair of large spots near base, four pairs of spots on posterior half, and dark markings around spinnerets and more or less on sides; venter pale. Spinnerets orange yellow.

Structure: Cervical indentations distinct; head convexly elevated back of eye area. Clypeus a little higher than the diameter of an AS eye. Eye area occupying more than half the width of the head. Anterior eye row slightly procurved; AM eyes much larger than any of the other eyes, scarcely more than a half radius apart, closer to side eyes. Posterior row straight; PM eyes about $1\frac{1}{2}$ diameters apart, a scant diameter from the side eyes. Chelicerae robust, moderately geniculate; teeth on hind margin of fang groove typical. Sternum only slightly longer than wide; side margins undulate. Legs stout; spines typical, except:

I: T — 5, — 14, \pm 11 small.

II: T + 10 (small); M + 5.

Epigynum close to that of *brevis*.

Measurements:

Females (2)

	AVERAGE	1	2	RATIO
Length	5.60 mm.	6.00 mm.	4.80 mm.	222
Carapace:				
Length	2.52	2.60	2.45	100
Width	1.76	1.83	1.70	70
Tibia-patella:				
I	2.32	2.40	2.25	92
IV	2.52	2.60	2.45	100

Male (1)

	MEASUREMENT	RATIO
Length	4.80	200
Carapace:		
Length	2.40	100
Width	1.87	78
Tibia-patella:		
I	2.27	95
IV	2.40	100

Distribution:

Type locality: Upper Cayuga Lake Basin, N. Y. (aW76°30': N42°25'). Female type (M. C. Z.).

Probable range: Northeastern U. S., between 35° and 50° north latitude, and from 85° west longitude to the Atlantic.

Known localities:

- *71·44 ! (Randolph, New Hampshire).
76·42 ! (Type locality).

Cicurina minnesota Chamberlin and Ivie, n. sp.

Pl. III, fig. 18

Color: Carapace dark orange, tinged with dusky. Chelicerae similar. Labium and endites dark dull orange, with light tips. Sternum light orange in the center, more brownish at the sides. Legs orange brown. Abdomen pale gray, with dark markings, consisting of a basal median stripe, a large spot on each side of basal half, and a series of paired oblique spots or chevrons on the posterior half. Venter more or less shaded with dark gray.

Structure: Female. Body somewhat robust. Eye area occupying a little more than half the width of the head. Height of clypeus about one diameter of an AS eye. AM eyes nearly as large as the PM eyes, less than a radius apart, subcontiguous with the side eyes. Posterior row straight; PM eyes a diameter apart, much closer to the side eyes. Chelicerae moderately geniculate; teeth on hind margin of fang groove typical. Spines on legs typical, except:

I: T — 11, 14.

II: T — 11, 14, + 9, 10 (small); M + 5.

IV: T — 12.

Epigynum close to that of *brevis*, see fig. 18.

Measurements:

		Females (3)			
		AVERAGE	1	2	RATIO
Length	4.80 mm.	5.20 mm.	4.60 mm.	4.60 mm.	232
Carapace:					
Length ..	2.07	2.07	2.13	2.00	100
Width	1.43	1.40	1.50	1.40	69
Tibia-patella:					
I	1.86	1.82	1.97	1.80	87
IV	2.09	2.10	2.20	1.97	95

Distribution:

Type locality: Itasca Park, Minnesota (aW95°15':N47°15').

Known localities:

- 95·47 ! (Itasca Park, Minn. (Reported as *brevis*, Exline)).
93·44 ! (Minneapolis, Minn. (reported as *brevis*, Exline)).

Cicurina tersa Simon

Pl. IV, fig. 22; Pl. IX, fig. 72.

Cicurina tersa Simon, 1886, CR. Soc. Ent. Belgique, 30:56-60.*C. tersa* Sim., Exline, 1913, Proc. Acad. Philadelphia, p. 18; Pl. 8, figs. 45, 48.*C. tersa* Sim., Exline, 1936, Amer. Mus. Novitates, No. 850:10; figs. 15, 15a.*C. tersa* Simon, Exline, 1938, Univ. Wash. Publ. Biol. 9:16; figs. 12, 15.

Color: Carapace dull orange brown, with faint dusky markings, and a very narrow dusky margin along sides. Chelicerae, labium, and endites reddish orange. Sternum dusky over an orange background. Legs dull orange. Abdomen dark gray with light gray markings, consisting of: a pair of basal spots, followed behind by one or two chevrons and three or four triangular median spots; sides mottled; venter dusky or mottled. Epigynum usually dusky to blackish.

Structure: Female. Head smaller than usual; cervical indentations deeper than usual. Height of clypeus about one diameter of an AS eye. Eyes large; eye area occupying much more than one-half the width of the head. AM eyes scarcely smaller than the PM eyes, about a radius apart, less than a radius from the side eyes. Posterior row faintly recurved or straight; PM eyes a full diameter apart, not quite a diameter from the side eyes. Chelicerae vertical only slightly convex at base in front; more slender than usual; frontal spines weak; hind margin of fang groove with 3 teeth and 3 denticles. Labium and endites short. Legs typical; spines on legs I and II long and overlapping; spines vary from typical thus:

I: T — 11, 14.

II: T — 11, 14, + 9, 10 (small); M ± 7, + 5 (small).

III: T ± 12.

IV: T ± 12.

Measurements:

Females (10)

	AVERAGE	EXTREMES	RATIO
Length	4.58 mm.	4.00 - 5.45	218
Carapace:			
Length	2.10	1.80 - 2.27	100
Width	1.43	1.23 - 1.67	68
Tibia-patella:			
I	1.94	1.62 - 2.25	92
IV	2.22	1.80 - 2.43	106

Males (3)

	1	2	3	AVERAGE	RATIO
Length	4.30	4.33	4.00	4.21	222
Carapace:					
Length	1.90	1.90	1.90	1.90	100
Width	1.40	1.53	1.50	1.48	78
Tibia-patella:					
I	1.90	1.90	1.90	1.90	100
IV	2.05	2.10	2.00	2.05	108

Distribution:

Type locality: Washington State. Male and female types. (Museum National d'Histoire Naturelle, Paris).

Probable range: Pacific northwest, between 42° and 50° north latitude, and west of 120° west longitude.

Known localities:

- *122·42 ! (Jackson Co., Oregon.)
- 122·47 ! (Seattle, Exline; Olympia, Exline; Stillaguamish Riv., Exline; Tacoma; Edmonds, Wash.)
- 122·48 ! (Larabee Park, Wash., female, Sept. 11, 1935, Chamberlin and Ivie; Orcas Island, Exline.)
- *123·43 ! (Comstock, Oregon, female, Sept. 10, 1935, Chamberlin and Ivie.)
- *123·44 ! (Corvallis, Oregon.)
- 123·48 ! (Sidney, Vancouver Is., B. C., male, Chamberlin and Ivie; Friday Harbor, Wash., Exline.)

***Cicurina pusilla* (Simon)**

Pl. IV, fig. 23; Pl. X, fig. 73.

Cybaeus pusillus Simon, 1886, CR. Soc. Ent. Belgique, 30:57.

Cicurina pusilla (Simon), Simon, 1898, Hist. Nat. Araign., 2:242.

Cybaeus pusillus Simon (= *Cicurina*), Banks, 1913, Proc. Acad. Philadelphia, p. 180; Pl. 8, figs. 34, 40.

C. pusilla (Simon), Petrunkevitch, 1911, Catalogue, p. 530.

C. pusilla (Simon), Exline, 1936, Amer. Mus. Novitates, no. 850:11; figs. 8, 17, 17a, 17b.

C. pusilla (Simon), Exline, 1938, Univ. Wash. Publ. Biol., 9: 15; figs. 4, 13, 16, 17.

Color: Carapace brownish orange. Legs and sternum brownish yellow to dull orange; mouthparts more reddish. Abdomen pale gray with dark gray markings of a typical pattern; sides streaked and mottled; venter pale. Dark gray is sometimes the dominant color on the dorsum, with the light gray appearing as the markings.

Structure: Typical for the group. Height of clypeus one diameter of an AS eye. Anterior eye row only slightly procurved; AM eyes a little more than a radius apart, closer to the side eyes. Posterior row slightly recurved; PM eyes a diameter apart, same from the side eyes or a little closer. Chelicerae with three teeth and three denticles on the hind margin of the fang groove. Palpus of male with a large tibial process. Legs typical, with spines varying from the typical formula thus:

I: T — 11, 14.

II: T — 11, 14, + 9, 10 (small); M + 5.

III: T ± 12.

IV: T ± 12.

Epigynum as figured.

Measurements:		Females (4)	
		AVERAGE	EXTREMES
Length		4.62 mm.	3.50 - 5.10
Carapace:			RATIO
Length		1.95	1.65 - 2.10
Width		1.42	1.25 - 1.55
Tibia-patella:			
I		1.88	1.52 - 2.06
IV		2.00	1.66 - 2.20
		Male (1)	
		MEASUREMENT	RATIO
Length		4.70 mm.	214
Carapace:			
Length		2.20	100
Width		1.60	73
Tibia-patella:			
I		2.20	100
IV		2.22	101

Distribution:

Type locality: Washington State. Male and female types. (Probably in Museum National d'Histoire Naturelle, Paris.)

Probable range: Pacific northwest, between 40° and 50° north latitude, and west of 120° west longitude.

Known localities:

- *122·42 ! (Pinehurst, Oregon.)
- 122·47 R (Seattle, Exline; Olympia, Exline.)
- *123·43 ! (Comstock, Oregon.)
- 123·45 ! (Tillamook Co., Ore., Exline; Bay City, Oregon.)
- *123·46 ! (Chinook, Washington.)
- 123·47 R (Olympic Mts., Exline.)

Cicurina nevadensis Simon

Cicurina nevadensis Simon, 1886, CR. Soc. Ent. Belgique.

C. nevadensis Simon, Petrunkevitch, 1911, Catalogue, p. 530.

C. nevadensis Simon, Banks, 1913, Proc. Acad. Philadelphia, p. 180; Pl. 13, f. 44.

C. nevadensis Simon, Exline, 1936, Amer. Mus. Novitates, No. 850:12.

Color: Carapace dark red brown, marked posteriorly with dark radiating lines. Legs reddish yellow, darker distally. Abdomen blackish gray, marked on the posterior half with black chevrons. Epigynum dark brown.

Structure: Anterior eye row slightly procurved; AM eyes nearly as large as the AS eyes. Posterior row straight; PM eyes much

smaller than the PS eyes; equidistant. Spines probably similar to those of *nina*. Epigynum also probably close to that of *nina*.

Measurements: Female. Length, 6.00 mm.

Distribution:

Type locality: Nevada, female holotype, Simon (probably in Museum National d'Histoire Naturelle, Paris.).

Remarks: This species is evidently close to *nina*, with which it may possibly be identical. No specimens were available for our study, and the description above is based upon the original account of Simon.

***Cicurina arcata* Chamberlin and Ivie, n. sp.**

Female Type.

Pl. IV, fig. 25.

Color: Carapace dark orange, with dusky markings and reticulations. Mouthparts reddish brown. Sternum dusky over an orange background. Legs orange basally, becoming brown distally; lightly shaded with dusky. Abdomen dark gray with a typical pattern of light markings above.

Structure: Robust. Height of clypeus less than a diameter of an AS eye. Eye area only a little more than half the width of the head. AM eyes much smaller than the PM eyes, a little more than a radius apart, subcontiguous with the lateral eyes. Posterior row faintly procurved: PM eyes about a diameter apart, same distance from the side eyes. Chelicerae vertical, slightly geniculate at base; frontal spines normal; hind margin of fang groove with eight teeth (1 spur, 4 teeth, 3 denticles). The femora of legs I, II, and III have a small spine on the anterior dorsal side near the middle; this spine is found in no other known species. The other spines are typical, except:

I: F — 5, T — 11, 14 (present as very small spines on one side only); M + 5 (one side only).

II: T — 14; 9, 10, 11 (small); M + 5.

III: M + 1.

IV: T — 12 (present as small spine on one side).

Measurements:

Female

	FEMALE (type)	RATIO
Length	a 6.00 mm.	a 211
Carapace:		
Length	2.85	100
Width	2.10	74
Tibia-patella:		
I	2.75	97
II	3.00	105

Distribution:

Type locality: Arcata, California (W124°5': N40°50'), July 13, 1937, R. V. Chamberlin. Female holotype.

Cicurina nina Chamberlin and Ivie, n. sp.

Color: Carapace, legs, and sternum orange; mouthparts more reddish. Abdomen gray, with light markings similar to those of *arcata*. (Color evidently somewhat faded in type specimens.)

Structure: Similar to *arcata*, but smaller, and with these differences: height of clypeus equal to a full diameter of the AS eyes; AM eyes a little larger; PM eyes a little closer to the lateral eyes than to each other; small dorso-anterior spine on the middle of the femora missing. Spines vary from the typical thus:

I: F — 5, T — 11, 14.

II: T — 11, 14, + 9, 10.

III: M \mp 1.

IV: T — 12.

Chelicerae and epigynum same as in *arcata*.

Measurements:	Females (2)			
	HOLOTYPE	PARATYPE	AVERAGE	RATIO
Length	5.30 mm.	5.10 mm.	5.20	242
Carapace:				
Length	2.27	2.05	2.16	100
Width	1.60	1.50	1.55	72
Tibia-patella:				
I	2.25	2.00	2.12	98
IV	2.40	2.15	2.27	105

Distribution:

Type locality: Northfork, California (W119°30': N37°16'), March, 1920, Dietrich, collector. Female holotype (Univ. Utah), female paratype (Cornell Univ.).

Remarks: This species is very close to *arcata*, and may prove to be no more than a variety of that species.

Cicurina jonesi Chamberlin and Ivie, n. sp.

Pl. IV, fig. 24; Pl. X, fig. 74.

Color: Carapace orange with light dusky marks and reticulations. Mouthparts light reddish brown. Sternum dusky over an orange background. Legs brownish orange, lightly shaded with dusky. Abdomen dark gray, with light markings forming a clear pattern above of the usual design; sides streaked with light gray; venter dusky.

Structure: Height of clypeus less than the diameter of an AS eye. Eye area occupying more than half the width of the head. Anterior eye row slightly procurved; AM eyes much smaller than the PM eyes, a little more than a radius apart, scarcely a radius from the side eyes. Posterior row straight; PM eyes nearly a diameter apart,

slightly more than a radius from the side eyes. Chelicerae vertical, only slightly geniculate at base; hind margin of fang groove with six teeth (1 spur, 3 teeth, 2 denticles). Spines of legs typical with the following modifications:

I: F — 5; T — 11, 14. (Ventral spines long.)

II: T — 11, 14, + 9, 10 (small); M + 5.

III: M — 1.

IV: T — 12.

The male palpus is very close to that of *sierra*, the most noticeable difference being the smaller and shorter hook on the conductor. The epigynum close to that of *sierra*.

Measurements:

Female

	HOLOTYPE	RATIO
Length	3.90 mm.	224
Carapace:		
Length	1.67	100
Width	1.27	76
Tibia-patella:		
I	1.60	96
IV	1.67	100

Males (2)

	1	2	AVERAGE	RATIO
Length	3.35 mm.	3.50 mm.	3.42	211
Carapace:				
Length	1.65	1.60	1.62	100
Width	1.25	1.23	1.24	76
Tibia-patella:				
I	1.70	1.73	1.71	106
IV	1.83	1.73	1.78	110

Measurements:

Type locality: Skinner's Bluff, Eugene, Oregon (aW123°5': N44°6'), Sept. 24, 1927, David T. Jones collector. Female holotype, immature paratype.

Probable range: Western Oregon and northern California, between 40° and 45° north latitude, and west of 122° west longitude.

Known localities:

- *123·43 ! (Comstock, Oregon, female paratype, Sept. 10, 1935, Chamberlin and Ivie.)
- *123·44 ! (Type locality.)
- ! (Mount Chintimini, Oregon, male allotype.)

Cicurina sierra Chamberlin and Ivie, n. sp.

Pl. IV fig. 26; Pl. X, fig. 75.

Color: Carapace, legs, and sternum orange. Mouthparts reddish orange. Abdomen light gray with dim markings of a darker gray above. Light specimens may lack abdominal markings.

Structure: Height of clypeus a scant diameter of an AS eye in female; more than a diameter in male. AM eyes nearly equal to the PM eyes, a radius apart, closer to the side eyes. Posterior row slightly recurved; PM eyes small, a scant diameter apart, closer to the side eyes. Chelicerae only slightly geniculate in front; teeth on hind margin of fang groove typical. Spines on legs typical, except:

I: T — 11, 14.

II: T — 11, 14, + 9, 10 (small); M + 5.

III: M + 1.

IV: T + 12.

Measurements:

Females (7)

	AVERAGE	EXTREMES	RATIO
Length	4.16 mm.	3.70 - 4.70	219
Carapace:			
Length	1.90	1.60 - 2.10	100
Width	1.40	1.20 - 1.54	74
Tibia-patella:			
I	1.87	1.55 - 2.17	98
IV	1.98	1.65 - 2.30	104

Males (3)

Length	4.62 mm.	3.60 - 5.65	221
Carapace:			
Length	2.09	1.73 - 2.50	100
Width	1.63	1.33 - 1.95	78
Tibia-patella:			
I	2.17	1.87 - 2.65	104
IV	2.36	1.92 - 2.90	113

Distribution:

Aspen Valley, Yosemite Park, California (aW119°45';N37°59'), August 11, 1931, W. Ivie, collector. Female holotype, male allotype, female paratypes.

Probable range: Sierra Nevada Mountains of California, between 36° and 42° north latitude, and between 118° and 123° west longitude.

Known localities:

- *119·37 ! (Type locality.)
- *120·39 ! (Emigrant Gap, July 11, 1937, R. V. Chamberlin, female paratype.)
- *120·40 ! (Guernsey Creek, Sept. 7, 1935, Chamberlin and Ivie, male and female paratypes.)
- *121·40 ! (Mt. Lassen, Sept. 7, 1935, Chamberlin and Ivie, female paratype.)
- *122·41 ! (Weed, California, Sept. 8, 1935, Chamberlin and Ivie, male paratype.)

Subgenus *CICURONA* Chamberlin and Ivie, new

Color: Variable (will be discussed further under subgroups).

Structure: Eyes 8; eye area occupying only slightly more than half the width of the head. Anterior eye row nearly straight; posterior row straight or slightly recurved. Eye arrangements essentially typical. Height of clypeus a diameter of an AS eye or more.

Chelicerae typical. Legs with spines modified from the typical formula thus:

I: F — 3; T 11 and 14 small or absent.

II: F — 3; T 11 and 14 small or absent, + 9, 10 (small); M + 5.

III: F — 3; T \pm A.

IV: F — 3; T \mp 12, \pm A.

Male palpus with the tibial process large and broad, cycle shaped; cymbium not excavated on the under side to the tip, and without a groove for the embolus to fit into; embolus short; conductor with a very short and weak hook.

Abdomen typical. Epigynum with a single opening; atrium small; bursae very slender; a very large bulb on the tube where the bursa joins the connecting canal; connecting canal of moderate length, folded or coiled; spermathecum single, large, spherical, with the connecting canal entering anteriorly and the fertilization duct originating posteriorly. For diagram of epigynum see fig. 9.

Size medium.

Distribution: Northwestern U. S., extending north into Canada, south into California and Colorado, and west to Colorado and Montana.

Classification: This subgenus is divided into two primary parts and three secondary divisions. These may be briefly characterized thus:

PART A AND DIVISION 1. Abdomen with color markings. Size large, robust. Eyes small. Clypeus high, about two diameters of an AS eye. Spine A missing from tibia IV. Epigynum with the opening typical; bulb pendant on a short narrow stem. Male unknown.

PART B. Abdomen without color markings. Height of clypeus about one diameter of an AS eye or somewhat more. Spine A present on tibiae III and IV. Epigynum with the opening more or less concealed by the overlapping hind margin; bulb not pendant.

DIVISION 2. Tibial process of palpus smaller and narrower. Epigynum with the bulb spherical; without an internal chitinous sheet attached to connecting canal.

DIVISION 3. Tibial process of palpus larger and broader. Epigynum with the bulb elongate; with an internal chitinous sheet extending out from the connecting canal.

Type Species: *Cicurina idahoana* Chamberlin.

Cicurina pagosa Chamberlin and Ivie, n. sp.

Pl. IV, fig. 27.

Color: Carapace orange brown. Mouthparts reddish brown. Sternum orange brown. Legs orange brown on basal segments; darker brown beyond patellae. Abdomen light gray, with dark markings above, consisting of: a median basal stripe, with a broken spot on each side followed behind by a series of wavy and broken transverse bands, which extend down the sides as a series of broken spots. Venter unmarked.

Structure: Large, heavy, and robust; otherwise essentially typical. Height of clypeus nearly twice the diameter of an AS eye. Eye area occupying slightly more than half the width of the head. Anterior eye row nearly straight; AM eyes smaller than PM eyes, more than a radius apart, a full radius from the side eyes. Posterior row straight; PM eyes nearly two diameters apart, and almost as far from the side eyes. Chelicerae thick; geniculate in front; frontal spine normal; hind margin of fang groove with teeth typical—teeth large, denticles very small. Labium fully as long as wide. Legs stout; spines typical, with the following modifications:

I: T — 11, 14.

II: F + 5; T — 11, 14 + 9, 10 (small); M + 5.

III.

IV: T — 12. (Spine A absent from tibiae III and IV.)

Measurements:		Female (holotype)	
		MEASUREMENT	RATIO
Length		8.30 mm.	230
Carapace:			
Length		3.60	100
Width		2.50	70
Tibia-patella:			
I		3.20	89
IV		3.45	96

Distribution:

Type locality: Pagosa Springs, Colorado (W107°1':N37°17'), June 21-23, 1919. Female holotype (American Mus. Nat. Hist.).

***Cicurina idahoana* Chamberlin**

Pl. V. fig. 30; Pl. X, fig. 78

Cicurina idahoana Chamberlin, 1919, Ann. Ent. Soc. Amer., 12:258; Pl. 19, f. 10.

C. idahoana Chamberlin, Exline, 1936, Amer. Mus. Novitates, No. 850:14; figs. 10, 20, 20a.

C. idahoana Chamberlin, Exline, 1938, Univ. Wash. Publ. Biol., 9:17; figs. 11, 18, 19.

Color: Carapace, legs and sternum orange, the legs more brownish beyond patellae. Mouthparts reddish orange. Abdomen pale yellowish gray, without markings.

Structure: Head arched back of eye area. Height of clypeus equal to one diameter of an AS eye. Eye area occupying a little more than half the width of the head. Anterior eye row nearly straight; AM eyes smaller than PM eyes, equidistant, a little more than the radius of an AM eye apart. Posterior row straight or slightly recurved; PM eyes one to one and a half diameters part, a diameter or less from the side eyes. Chelicerae typical. Legs typical, spines vary from the typical formula thus:

I: T 11 and 14 small (14 sometimes absent).

II: T + 9, 10 (small), 11, 14 small; M + 5.

III: T + A.

IV: T + 12, + A.

Measurements:

	AVERAGE	EXTREMES	RATIO
Length	5.43	4.60 - 6.40	210
Carapace:			
Length	2.58	2.20 - 3.10	100
Width	1.83	1.65 - 2.30	71
Tibia-patella:			
I	2.39	2.10 - 3.05	93
IV	2.57	2.20 - 3.30	100

	Males (2)		AVERAGE	RATIO
	1	2		
Length	5.35	5.70	5.52	205
Carapace:				
Length	2.60	2.80	2.70	100
Width	1.93	2.00	1.96	73
Tibia-patella:				
I	2.40	2.60	2.50	93
IV	2.67	2.85	2.76	102

Distribution:

Type locality: Moscow Mountains, Idaho (aW116°59':N46°44').

Female holotype (M.C.Z.).

Probable range: Northwestern United States and Southwestern Canada, between 45° and 50° north latitude, and west of 100° west longitude.

Known localities:

- 121·46 R (Mt. Rainier, Exline.)
- *114·46 ! (Ravalli Co., Montana.)
- 116·46 R (Type locality.)
- 121·45 R (Cascade Summit, Oregon, Exline.)
- 121·47 R (Lake Keechelus, Wash., Exline.)
- 122·47 ! (Olympia; Seattle, Exline; 10 mi. So. Everett, Chamberlin and Ivie, Sept. 16, 1935, males and females; Chase Lake, Exline; Olympia, Exline; Medina, Wash., Exline.)
- 123·48 R (San Juan Is., Wash., Exline.)
- a123·49 ! (British Columbia.)
- Tomhoi Mt., Skamania Co., Exline.
- Quinault, Wash., Exline.
- Vader, Wash., Exline.

Cicurina simplex Simon

Pl. IV, fig. 29; Pl. X, fig. 79.

Cicurina simplex Simon, 1886, CR. Soc. Ent. Belgique, 30:59.

C. simplex Simon, Petrunkevitch, 1911, Catalogue, p. 531.

C. simplex Simon, Banks, 1913, Proc. Acad. Philadelphia, p. 180; Pl. 13, figs. 35, 38.

C. simplex Simon, Exline, 1936, Amer. Mus. Novitates, No. 850:15; figs. 19, 19a-c.

C. simplex Simon, Exline, 1938, Univ. Wash. Publ. Biol., 9:17; figs. 14, 20.

Color: Carapace, base of legs, and sternum orange, the legs more brownish beyond patellae. Mouthparts reddish orange. Abdomen pale yellowish gray without markings.

Structure: Height of clypeus 1 to 1½ diameters of an AS eye. AM eyes more than a radius apart, closer to the side eyes. Posterior row slightly recurved; PM eyes 1½ to 2 diameters apart; closer to the side eyes. Chelicerae only slightly geniculate; otherwise typical.

Spines of legs very from typical formula as follows:

I: $T \pm 14$ (small), 11 small.

II: $F + 5$; $T + 9, 10$ (small), 11, 14 small; $M + 5$.

III: $T + A$.

IV: $T + A, \mp 12$.

Measurements:

Females (6)

	AVERAGE	EXTREMES	RATIO
Length	6.03	4.70 - 6.70	214
Carapace:			
Length	2.82	2.33 - 3.10	100
Width	1.96	1.67 - 2.13	70
Tibia-patella:			
I	2.61	2.23 - 3.00	93
IV	2.82	2.35 - 3.20	100

Males (2)

	1	2	AVERAGE	RATIO
Length	6.00	4.60	5.30	206
Carapace:				
Length	2.95	2.20	2.57	100
Width	2.20	1.65	1.92	75
Tibia-patella:				
I	2.90	2.10	2.50	97
IV	3.20	2.15	2.67	104

Distribution:

Type locality: Washington. Female holotype and paratypes (probably in Museum National d'Histoire Naturelle, Paris).

Probable distribution: Northwestern U. S. and southwestern Canada, between 43° and 55° north latitude and west of 112° west longitude.

Known localities:

114·46	R	(Hamilton, Mont., Exline; Moose Lake, Mont., Exline.)
*116·44	!	(Lost Lake, near Tamarack, Idaho, female, July, 1939, W. Ivie.)
116·46	R	(Moscow, Idaho, Exline.)
*121·46	!	(Rainier Park, Wash., Aug., 1929, female, R. V. Chamberlin.)
122·47	R	(Seattle and Olympia, Wash., Exline.)
*122·48	!	(Arlington, Wash., female, Sept. 11, 1935, Chamberlin and Ivie.)
123·48	!	(Sidney, Vancouver Is., B. C., male, Sept. 16, 1935, Chamberlin and Ivie; Friday Harbor, Exline.)
*124·49	!	(Lake Cameron, Vancouver Is., B. C., female, Sept. 13, 1935, Chamberlin and Ivie.)

Cicurina shasta Chamberlin and Ivie, n. sp.

Pl. IV, fig. 28; Pl. X, fig. 80.

Color: Carapace, legs, and sternum orange, the legs more brownish beyond the patellae. Abdomen pale yellowish gray without markings.

Structure: Similar to *simplex*, with differences in the eyes and genitalia. Height of clypeus equal to 2 diameters of an AS eye. Eye area occupying more than half the width of the head. AM eyes larger than any of the others, which are smaller than usual. Anterior row straight; AM eyes a scant radius apart, and about the same distance from the side eyes. Posterior row straight or slightly recurved; PM eyes more than two diameters apart, and nearly as far from the side eyes. Legs spined as in *simplex*. Epigynum and palpus close to those of *simplex*, with minor differences as shown in the figures.

Measurements:

Females (2)

	HOLOTYPE	PARATYPE	AVERAGE	RATIO
Length	6.70 mm.	5.30 mm.	6.00	214
Carapace:				
Length	3.10	2.50	2.80	100
Width	2.27	1.85	2.06	74
Tibia-patella:				
I	2.87	2.40	2.63	94
IV	3.10	2.60	2.85	102

Males (2)

	ALLOTYPE	PARATYPE	AVERAGE	RATIO
Length	6.50 mm.	5.80 mm.	6.15	216
Carapace:				
Length	3.00	2.71	2.85	100
Width	2.47	2.00	2.23	78
Tibia-patella:				
I	3.12	2.60	2.86	100
IV	3.33	2.90	3.11	110

Distribution:

Type locality: Weed, California (W122°25':N41°25'), Sept. 8, 1935. Female holotype, male allotype, male and female paratypes, Chamberlin and Ivie.

Subgenus CICURUSTA Chamberlin and Ivie, new

Color: Variable; with the exception of *arcuata*, the abdomen is usually not strongly marked.

Structure: Eyes 8, typical. Eye area occupying about half the width of the head; anterior eye row procurved; posterior row usually

slightly procurved. Height of clypeus variable. Chelicerae typically strongly geniculate, especially in the female. Legs stout; tibia-patella IV as long as or longer than the carapace; spines essentially typical with numerous minor variations, some of which will be noted under the subgroups.

The male palpus has the tibial process well developed, variable for the groups; embolus usually fitting into a groove on the cymbium; conductor usually with a short hook, which is not distinctly hook-shaped. Epigynum with a double spermathecum, a blind secondary sac being attached to the primary sac by a slender tube; the opening is single, usually oval, and usually anterior from the posterior margin of the epigynal plate; atrium usually a distinct chamber; bursae moderately slender as compared to those of the subgenus *Cicurina*; a distinct bulb on the tube at the juncture of the bursa and the connecting canal, although it is usually small; connecting canal slender, and of varying lengths, folded or coiled; connecting canal enters the primary sac of the spermathecum on the posterior or dorsal side; the fertilization duct is long, and originates from the primary sac near the point where the connecting canal enters. For diagram of epigynum, see fig. 10.

Size, small, medium or large.

Distribution: Occurs throughout the range in North America, although only one species is found in the eastern part. Most of the species, especially in the northern part of the range reach their prime in September. They are found on the ground, usually under rocks or logs.

Classification: This subgenus is divided into two primary parts and four secondary divisions. These may be briefly characterized thus:

PART A. Legs I and II with spines 11 and 14 usually absent from the tibiae or very weak; spine 10 usually present as a small spine on tibia II. Male palpus with the tibial process moderately small, pointed, and without a 'twist' in the dorsal fold; hook of conductor short, stout, pointed; tip of cymbium normal; embolus short. Epigynum with the connecting canal short, with only one or two simple loops.

DIVISION 1. Tibial process of palpus short, not longer than the tibia proper, which is itself longer than usual; embolus short, not fitting into a groove across the cymbium; hook of conductor very short. Females unknown.

DIVISION 2. Tibial process of palpus longer than the tibia proper; embolus short, fitting into a small groove across the cymbium. Epigynum of type shown in figure 31.

PART B. Male palpus with the tibial process large, with a distinct 'twist' in the dorsal fold (see fig. 87); tip of cymbium more or less extended, and excavated on the under side; embolus long, fitting into a groove which extends around the tip of the cymbium on the under side. Epigynum with the connecting canal very long, and more or less complexly folded.

DIVISION 3. Epigynum with a small opening, more or less concealed; atrium a bulb-like chamber. Abdomen immaculate.

DIVISION 4. Epigynum with a distinct oval opening; atrium well developed, but not bulb-shaped. Palpus same as for Division 3. Abdomen with or without color markings.

Type Species *Cicurina robusta* Simon.

Cicurina altana Chamberlin and Ivie, n. sp.

Male. Pl. X, fig. 76.

Color: Carapace, legs, and sternum orange, the legs slightly darker distally. Chelicerae orange red. Endites and labium orange. Abdomen pale gray, with a pattern of dark gray above consisting of: a median basal wedge-shaped mark, with two pairs of short side branches; posterior half crossed by a series of five wavy bars, whose ends are broken into spots on the sides; darkened around base of spinnerets; venter pale.

Structure: Carapace not so strongly modified as is characteristic of the male in this genus. Height of clypeus about $1\frac{1}{2}$ diameters of an AS eye. Carapace slightly arched back of eyes. Thoracic part wide; head narrowed; cervical indentations moderate. Eye area occupying about half the width of the head. Anterior eye row straight; AM eyes smaller than the PM eyes, less than a radius apart, even closer to the side eyes. Posterior row slightly procurved; PM eyes slightly more than a diameter apart, about the same distance from the side eyes. Chelicerae typical. Legs rather long and slender; spines vary from the typical formula thus.

I: T — 11, 14.

II: T — 11, 14.

III:

IV: M + 7.

Palpus small; tibia longer than usual; tibial process short, not longer than the tibia proper; hook of conductor short and not hooked; embolus not fitting into a groove in the cymbium.

Measurements:	MALE (Holotype)	RATIO
Length	6.12 mm.	198
Carapace:		
Length	3.10	100
Width	2.32	75
Tibia-patella:		
I	3.33	108
Iv	3.60	116

Distribution:

Type locality: Idaho Springs, Colorado (W105°41':639°25').
August 24, 1935, W. Ivie. Male holotype

Probable range: Rocky Mountains, between 35° and 42° north latitude, and between 104° and 108° west longitude.

Known localities:

*105-39 ! (Type locality; Berthoud Pass, Colorado, August 24, 1935, W. Ivie, immature female paratype.)

***Cicurina intermedia* Chamberlin and Ivie**

Pl. V, figs. 31-34; Pl. X, fig. 77.

Cicurina intermedia Chamberlin and Ivie, 1933, Bull. Univ. Utah, 23(4):46 (Biol. Ser. 2(2):46); Pl. 11, figs. 116-118.

C. intermedia Ch. and I., Exline, 1936, Amer. Mus. Novitates, No. 850:19.

C. intermedia Ch. and I., Exline, 1938, Univ. Wash. Pub. Biol., 9(1):18.

Color: Carapace, legs, and sternum orange. Chelicerae, labium, and endites more reddish. Abdomen pale grayish, without markings, or with faint markings on posterior part.

Structure: Height of clypeus about one diameter of an AS eye. Eye area occupying slightly less than half the width of the head. Anterior eye row slightly procurved; AM eyes about a radius apart, slightly farther from the side eyes. Posterior row straight, slightly procurved, or slightly recurved; PM eyes about $1\frac{1}{2}$ diameters apart, more or less, about one diameter from the side eyes. Chelicerae moderately geniculate; hind margin of fang groove usually with a typical arrangement of teeth, but variations are common. Legs typical, with spines varying from the typical formula thus:

I: F — 6a; T \pm 11, — 14; M \pm 8.

II: T — 14; 11 small, + 10 (small).

III:

IV: T — 12.

Spine F3 often very small or apparently absent, especially on legs III and IV.

Measurements:		Females (18)		
		AVERAGE	EXTREMES	RATIO
Length		5.08	4.30 - 6.00	241
Carapace:				
Length		2.11	1.90 - 2.47	100
Width		1.48	1.30 - 1.75	70
Tibia-patella:				
I		1.95	1.60 - 2.15	92
IV		2.12	1.75 - 2.33	100
		Males (4)		
Length		4.48	4.00 - 4.90	209
Carapace:				
Length		2.14	2.00 - 2.35	100
Width		1.66	1.55 - 1.87	78
Tibia-patella:				
I		2.18	2.10 - 2.40	101
IV		2.26	2.20 - 2.50	106

Distribution:

Type locality: Clear Creek, Raft River Mts., Utah (W113°27': N41°58'), Chamberlin and Ivie, female holotype, male allotype. (Univ. of Utah.)

Probable range: Western U. S. between 37° and 46° north latitude and between 110° and 120° west longitude.

Known localities: (A number of records of *æertsch*, *Exline*, etc., are not included here as the specimens on which they were based have proved to be, or are strongly suspected of being other species).

*111·38 ! (Fish Lake, male and female.)

111·40 ! (Common in Wasatch Mts., and adjacent mountains.)

*111·42 ! (Fish Haven, Idaho, male.)

113·41 ! (Type locality, and other localities in the Raft River Mts.)

*166·44 ! (Lost Lake, near Tamarack, Idaho, August 20, 1936, male and female, W. Ivie.)

Remarks: The specimens on hand show a wide range in the structure of the epigynum and in details of the eyes. Since these variations appear to correlate fairly well with geographical distribution, it is probable that several varieties are contained therein.

***Cicurina minnedoka* Chamberlin and Ivie, n. sp.**

Pl. V, fig. 39.

Color: Similar to *intermedia*; faint markings present on abdomen.**Structure:** Similar to *intermedia*, except larger and somewhat more robust, and with slight differences in the eyes. Height of clypeus slightly more than a diameter of an AS eye. AM eyes distinctly smaller than the PM eyes, less than a radius apart, a little more than a radius from the side eyes. Posterior row very slightly procurved; PM eyes a little more than a diameter apart, about a diameter from the side eyes. Frontal spines of chelicerae weak. Leg spines similar to *intermedia*. Bursa of epigynum proportionately shorter and wider apart than in *intermedia*.

Measurements:	FEMALE HOLOTYPE	RATIO
Length	6.00 mm.	226
Carapace:		
Length	2.65	100
Width	2.00	75
Tibia-patella:		
I	2.53	95
IV	2.80	106

Distribution:

Type locality: Twin Falls, Idaho (aW114°30':N42°31'), female holotype.

***Cicurina schultzi* Exline**

Pl. V, fig. 35

Cicurina schultzi Exline, 1936, Amer. Mus. Novitates, No. 850; 16; fig. 23.**Color:** Carapace, legs, and sternum light yellowish orange, the legs more brownish beyond the patellae. Labium and endites orange. Chelicerae reddish orange. Abdomen pale grayish yellow, without distinct markings; covered with dark grayish hairs, these especially coarse and dark near base above.**Structure:** Carapace less convex than usual. Height of clypeus less than the diameter of an AS eye. AM eyes small, about half the diameter of the AS eyes. Anterior eye now procurved; AM eyes less than a radius apart, about a radius from the side eyes. Posterior row straight; PM eyes about a diameter apart, about $\frac{3}{4}$ of a diameter from the side eyes. Chelicerae only moderately geniculate at base; teeth on hind margin of fang groove typical; frontal spines small,

scarcely distinguishable from the heavy setae on the front of the chelicerae. Legs with spines of typical arrangement, except as follows:

I: T — 11, 14.

II:

III: T 11 and 14 reduced almost to setae.

IV: T 12 smaller than the others.

Epigynum close to that of *intermedia*.

Measurements:	FEMALE HOLOTYPE	RATIO
Length	3.65 mm.	203
Carapace:		
Length	1.80	100
Width	1.25	70
Tibia-patella:		
I	1.60	89
IV	1.80	100

Distribution:

Type locality: McDowell Lake, Upper Anaconda Creek, Glacier National Park, Montana (aW113°:N48°30'). Female holotype (American Mus. Nat. Hist.)

Cicurina gertschi Exline

Pl. V, fig. 36

Cicurina gertschi Exline, 1936, American Mus. Novitates, No. 850:17, fig. 22.

Color: Carapace orange. Chelicerae more reddish. Labium and endites orange with whitish tips. Sternum and legs amber yellow, darker distally. Abdomen pale gray, with dark gray markings, consisting of scattered mottlings, especially heavy around the spinnerets, and an indistinct median basal mark, followed behind by a series of indistinct chevrons.

Structure: Carapace moderately low. Height of clypeus slightly less than the diameter of an AS eye. Anterior row procurved; AM eyes about a half radius apart, a scant radius from the side eyes. Posterior row slightly procurved; PM eyes about $1\frac{1}{3}$ diameters apart, one diameter from the side eyes. Chelicerae strongly geniculate; frontal spines weak but distinct; teeth on hind margin of fang groove typical. Spines on legs typical, except:

I: T — 11, 14.

II: T — 11, 14.

III: M — 1.

IV: T — 12.

Measurements:	FEMALE HOLOTYPE	RATIO
Length	5.00 mm.	250
Carapace:		
Width	1.40	70
Length	2.00	100
Tibia-patella:		
I	1.70	85
IV	1.85	92

Distribution:

Type locality Larch Creek, Ravalli Co., Montana (aW114°15': N46°15'). Female holotype (American Museum).

Cicurina rubra Chamberlin and Ivie, n. sp.

Pl. V, fig. 37.

Color: Carapace dark brown. Chelicerae dark chestnut. Legs, sternum, and mouthparts reddish brown. Abdomen pale gray, with faint markings of darker gray, as in *gertschi*.

Structure: Similar to *gertschi*, but more robust. Carapace more elevated. Eyes similar to *gertschi*, but farther apart. AM eyes three-fourths of a diameter apart, same from side eyes. PM eyes two diameters apart, a little more than a diameter from the side eyes. Spines vary from the typical formula thus:

I: T — 11, 14.

II: T — 11, 14.

III:

IV:

Epigynum very similar to that of *gertschi*.

Measurements:	FEMALE HOLOTYPE	RATIO
Length	6.00 mm.	237
Carapace:		
Length	2.53	100
Width .....	.65	65
Tibia-patella:		
I	2.25	89
IV	2.50	99

Distribution:

Type locality: Moose Lake, Ravalli Co., Montana (aW114°15': N46°12'), March 25, 1934, W. L. Jellison, collector. Female holotype (American Museum).

Cicurina tacoma Chamberlin and Ivie, n. sp.

Pl. V, fig. 38.

Color: Carapace, legs, and sternum orange; mouthparts darker orange. Abdomen pale gray with darker markings above; these include a series of chevrons on the posterior half.

Structure: Height of clypeus about one diameter of an AS eye. Eye area occupying a little more than one half the width of the head. Anterior eye row procurved; AM eyes smaller than the PM eyes, about a radius apart, about the same distance from the side eyes. Posterior row straight; PM eyes a little more than a diameter apart, a little less than a diameter from the side eyes. Chelicerae with a spur, three teeth, and two denticles on the hind margin of the fang groove. Leg spines typical, except:

I: (missing).

II: T + 10, 11 small, — 14.

III: F — 3.

IV: F — 3.

Measurements:

	FEMALE HOLOTYPE	RATIO
Length	4.60 mm.	242
Carapace:		
Length	1.90	100
Width	1.33	70
Tibia-patella:		
I	-----	-----
IV	1.80	95

Distribution:

Type locality: Tacoma, Washington (aW122°24':N47°15'), August 9, 1929, R. V. Chamberlin, collector. Female holotype.

Cicurina colorada Chamberlin and Ivie, n. sp.

Pl. VI, fig. 43

Color: Carapace dark dull orange. Chelicerae reddish orange. Labium and endites dusky orange. Sternum orange with narrow dusky margins along the sides. Legs dull yellowish orange. Abdomen light gray without markings.

Structure: Height of clypeus a little more than the diameter of an AS eye. Posterior eye. Posterior eye row slightly procurved; PM eyes a little more than a diameter apart, about a diameter from the side eyes. Spines on legs typical except:

I: T — 5.

II: M — 6.

III:

IV: T — 12.

Epigynum with a very small atrium.

Measurements:	FEMALE HOLOTYPE	RATIO
Length	7.30 mm.	235
Carapace:		
Length	3.10	100
Width	2.10	68
Tibia-patella:		
I	2.70	87
IV	3.05	98

Distribution:

Type locality: Monterey, California (aW121°53':N36°35').
March, 1936. Female holotype.

Cicurina ludoviciana Simon

Pl. VI, fig. 40; Pl. XI, fig. 81.

Cicurina ludoviciana Simon, 1898, Ann. Soc. Ent. Belgique, 42:8.

C. ludoviciana Simon, Banks, 1913, Proc. Acad. Sci. Philadelphia, p 180; Pl. 13, fig. 33.

C. ludoviciana Simon, Bishop and Crosby, 1926, Journ. Elisha Mitchell Sci. Soc., 41:

C. ludoviciana Simon, Exline, 1936, American Mus. Novitates, No. 850:16.

Color: Carapace dark orange. Chelicerae light chestnut. Labium and endites dark orange to reddish brown. Legs orange brown. Abdomen pale gray, immaculate.

Structure: Size large and robust. Carapace typical; head arched back of the eyes. Height of clypeus $1\frac{1}{4}$ to $1\frac{3}{4}$ diameters of an AS eye. Anterior eye row slightly procurved; AM eyes fully as large as the PM eyes, about one-fourth diameter apart, about one-third diameter from the side eyes. Posterior row faintly procurved; eyes nearly equidistant, about $1\frac{1}{4}$ diameters of a PM eye apart. Median ocular area only slightly wider behind than in front. Chelicerae stout; frontal spines small; hind margin of fang groove typically with 8 to 10 teeth, those farthest away from the base of the fang grading into denticles. Leg spines typical, except:

Female

I: T — 5 (sometimes present as a small spine, usually on only one side); M + 15

II: T \pm 10 (small); M \pm 4, 6, 8a.

III:

IV: T \pm 12.

Male

I: T \pm 5; M + 4, 15, \pm 8a.

II: T \pm 10; M + 4, 8a, \pm 5.

IV: T \pm 12.

Measurements:		Females (5)		
		AVERAGE	EXTREMES	RATIO
Length		11.18 mm.	8.30 - 13.00	222
Carapace:				
Length		5.04	4.00 - 5.80	100
Width		3.49	2.50 - 4.00	69
Tibia-patella:				
I		4.80	4.00 - 5.40	95
IV		5.05	4.00 - 5.80	100
		Males (4)		
Length		10.55 mm.	9.00 - 11.50	208
Carapace:				
Length		5.08	4.12 - 5.50	100
Width		3.89	3.20 - 4.25	77
Tibia-patella:				
I		5.25	4.40 - 5.80	103
IV		5.28	4.50 - 5.80	104

Distribution:

Type locality: "Louisiana." Female holotype. (Probably in Museum National d' Histoire Naturelle, Paris).

Probable range: South central United States, between 87° and 98° west longitude, and between 30° and 38° north latitude.

Known localities:

- ! (Chastine, Louisiana, females.)
 *91·36 ! (Imboden, Arkansas, males and females.)
 *97·36 ! (Chicasha, Oklahoma.)

***Cicurina varians* Gertsch and Mulaik, n. sp.**

Pl. VI, fig. 42; Pl. XI, fig. 82; Pl. XII, figs. 93, 95.

Color: Carapace orange to yellowish brown. Chelicerae reddish brown. Labium and endites light reddish brown with pale tips. Sterum orange with darker margins. Legs light brownish yellow basally, darker brown distally. Abdomen pale gray without markings.

Structure: Head slightly arched back of eye area. Height of clypeus a little more than the diameter of an AS eye. Eye area occupying about one-half width of the head. Anterior eye row slightly procurved; AM eyes smaller than the PM eyes, less than a radius apart, about the same distance from the side eyes. Posterior row straight; PM eyes a little more than a diameter apart, about a diameter from the side eyes. Chelicerae strongly geniculate; hind margin of fang

groove with 3 to 6 teeth and 2 or 3 denticles. Legs long and slender; tibia-patella IV longer than the carapace; spines vary from typical formula thus:

FEMALES	MALES
I: T — 5, 8; M + 15.	I: M + 4, 5, 8a, 15, \pm 7.
II: 2 \pm 10; M — 6, + 8a.	II: M + 4, 5, 8a, 7, \pm 10.
III:	III:
IV: T \pm 12.	IV: T \pm 12.

Male. Height of clypeus $1\frac{1}{2}$ diameters of an AS eye. Anterior eyes sub-contiguous; AM eyes only slightly smaller than the PM eyes. Posterior eye row slightly procurved; PM eyes $1\frac{1}{4}$ to $1\frac{1}{2}$ diameters apart, about one diameter from the side eyes.

Measurements:	Females (13)		
	AVERAGE	EXTREMES	RATIO
Length	8.00 mm.	6.00 - 10.80	220
Carapace:			
Length	3.64	2.75 - 4.80	100
Width	2.53	2.07 - 3.38	70
Tibia-patella:			
I	3.51	2.66 - 4.50	96
IV	3.82	3.05 - 4.80	105
	Males (10)		
Length	7.00 mm.	5.90 - 8.50	207
Carapace:			
Length	3.39	2.90 - 4.00	100
Width	2.57	2.18 - 3.10	76
Tibia-patella:			
I	3.57	3.00 - 4.20	105
IV	3.72	3.20 - 4.35	110

Distribution:

Type locality: Raven Ranch, Kerr Co., Texas ($W99^{\circ}7':N29^{\circ}55'$), female holotype, male allotype, male and female paratypes, Dorothea and Stanley Mulaik, December, 1939.

Probable range: South central U. S. and northeastern Mexico, between 25° and 38° north latitude, and between 93° and 106° west longitude.

Known localities:

- *96·32 ! (West of Dallas, Texas, female, Attys Sanders.)
 *97·30 ! (Austin, Texas; Hays Co., Texas, D. and S. Mulaik, April, 1939.)
 *98·27 ! (17 mi. north of Alice, Texas, D. and S. Mulaik, Dec., 1939.)
 *98·29 ! (San Antonio, Texas; Kendall Co., Texas.)
 *98·31 ! (Cherokee, Texas, female, L. I. Davis, Dec. 29, 1936.)
 *99·29 ! (Type locality; Bandera Co., Texas.)
 *99·31 ! (39 mi. west of Brady, Texas, D. and S. Mulaik, Dec., 1939.)
 *101·35 ! (Paloduro Canyon, Texas, female, D. and S. Mulaik, Dec., 1939.)
 *105·37 ! (Gardner, Colorado, male.)

Cicurina davisii Exline

Pl. VI, fig. 41; Pl. XI, fig. 83

Cicurina davisii Exline, 1936, Amer. Mus. Novitates, No. 850:18; fig. 24.

Color: Carapace, legs, and sternum pale yellow. Mouthparts orange. Abdomen pale gray, without markings.

Structure: Height of clypeus less than the diameter of an AS eye. Eye area occupying slightly more than one half the width of the head. AM eyes much smaller than the PM eyes, scarcely more than $\frac{1}{2}$ diameter of the AS eyes; about a radius apart, almost contiguous with the side eyes. Posterior row slightly procurved; PM eyes about one diameter apart, scarcely more than half as far from the side eyes. Chelicerae strongly geniculate; typical. Labium much wider than long. Spines of legs typical, except:

Female	Male
I: T — 8, \mp 14,	I: M \pm 4, + 5, \pm 8a.
M \mp 8, \pm 15.	II: M + 4, 5, \pm 7.
II: T \mp 14; M \pm 6.	III:
III:	IV: T — 12.
IV: T — 12.	

Measurements:

Females (13)

	AVERAGE	EXTREMES	RATIO
Length	4.81 mm.	4.00 - 5.50	235
Carapace:			
Length	2.05	1.80 - 2.48	100
Width	1.51	1.10 - 1.70	74
Tibia-patella:			
I	1.92	1.65 - 2.30	94
IV	2.13	1.85 - 2.53	104

	Males (2)		AVERAGE	RATIO
	1	2		
Length	4.60	6.00	5.30	214
Carapace:				
Length	2.10	2.87	2.48	100
Width	1.57	2.30	1.93	78
Tibia-patella:				
I	2.15	3.00	2.57	104
IV	2.18	3.15	2.66	107

Distribution:

Type locality: Llano, Texas (W98°36':N30°45'). Female holotype (American Museum).

Probable range: Texas, between 95° and 105° west longitude, and between 25° and 35° north latitude.

Known localities:

- 98·30 ! (Type locality.)
 *99·29 ! (Raven Ranch, Kerr Co., Texas, male and females, D. and S. Mulaik, December, 1939.)
 *99·31 ! (Eden, Texas.)

***Cicurina cavealis* Bishop and Crosby**

Pl. VI, figs. 44-45; Pl. XI, fig. 86

Cicurina cavealis Bishop and Crosby, 1926, J. Elisha Mitchell Sci. Soc., 41:197; fig. 46.
C. cavealis Bishop and Crosby, Exline, 1936, Amer. Mus. Novitates, No. 850:19.

Color: Carapace, legs, and sternum light brownish orange. Mouthparts darker and more reddish. Abdomen pale gray, without markings.

Structure: Medium sized; moderately slender. Carapace moderately low. Height of clypeus about one diameter of an AS eye or a little more. Eye area occupying a little more than half the width of the head. AM eyes much smaller than the PM eyes; less than a radius apart, about same distance from the side eyes. Posterior row slightly procurved; PM eyes slightly more than a diameter apart, about a diameter from the side eyes. Chelicerae thick; geniculate; hind margin of fang groove with 9 teeth, the two nearest the base of the fang large, the others grading into small slender denticles. Legs long, moderately slender; spines typical, with the following modifications:

I: T \pm 11, 14.

II: T + 9, 10 (small); M + 4, 5.

III:

IV: T — 12.

Male

Height of clypeus $1\frac{1}{2}$ diameters of an AS eye. PM eyes about one diameter apart, closer to the side eyes. Hind margin of fang groove with 10 teeth, the first 3 larger than the others, arranged as in female. Legs long and slender.

Measurements:	Females (3)				RATIO
	ARKANSAS	FISHER CAVE		AVERAGE	
Length	6.30 mm.	6.30	5.50	6.03	225
Carapace:					
Length	2.95	2.70	2.40	2.68	100
Width	2.00	1.87	1.67	1.85	70
Tibia-patella:					
I	2.87	3.00	2.60	2.82	105
IV	(missing)	3.15	2.70	2.95	110

Male

	ARKANSAS	RATIO
Length	6.20	207
Carapace:		
Length	3.00	100
Width	2.26	75
Tibia-patella:		
I	3.27	109
IV	3.35	112

Distribution:

Type locality: Rocheport Cave, Missouri (W92°32':N39°). Female holotype (Cornell University Collection).

Probable range: South central U. S., between 32° and 40° north latitude, and between 90° and 95° west longitude.

Known localities:

- *91-36 ! (Imboden, Arkansas, male and female.)
- ! (Type locality.)
- ! (Fisher Cave, Missouri, two females.)

Cicurina colorada Chamberlin and Ivie, n. sp.

Pl. VII, fig. 49

Color: Carapace orange brown. Chelicerae light chestnut. Sternum, labium and endites orange brown. Legs brownish orange. Abdomen light gray, mottled with darker, the mottling being darker along the dorsum, around the spinnerets, and on the venter, lighter on the sides.

Structure: General body structure robust. Height of clypeus one diameter of an AS eye. Eye area occupying about one half the width of the head. Eyes typical; AM eyes much smaller than the PM eyes. AM eyes a little less than a radius apart, about the same distance from the side eyes. Posterior row very slightly procurved; PM eyes about $1 \frac{1}{3}$ diameters apart, scarcely a diameter from the side eyes. Chelicerae strongly geniculate; frontal spines typical; teeth on hind margin of fang groove typical. Labium and endites longer than usual, the labium being scarcely wider than long. Sternum rounded. Legs stout; spines typical, with the following modifications:

I: T — 11, 14; M + 4 (one side only).

II: T — 14.

III: M — 1.

IV:

Measurements:	FEMALE HOLOTYPE	RATIO
Length	7.00 mm.	241
Carapace:		
Length	2.90	100
Width	2.15	74
Tibia-patella:		
I	2.82	98
IV	3.00	104

Distribution:

Type locality: Lamar, Colorado (W102°35':N38°5'), female holotype. American Museum.)

Cicurina itasca Chamberlin and Ivie, n. sp.

Pl. VII, fig. 48.

Color: Carapace light orange. Chelicerae bright orange. Labium and endites light orange with pale tips. Legs and Sternum light yellowish. Abdomen pale gray, with or without dusky markings above.

Structure: Small, rather slender, and somewhat flat. Carapace low; broad in the head region. Height of clypeus less than one diameter of an AS eye. Eyes small; eye area occupying a little less than one half the width of the head. PM eyes small, about same size as AM eyes, much smaller than PS eyes. Anterior eye row procurved; AM eyes less than a radius apart, more than a radius from the side eyes. Posterior row slightly procurved, PM eyes a little more than $1 \frac{1}{2}$ diameters apart, a full diameter from the side eyes. Chelicerae geniculate; teeth on hind margin of fang groove typical. Labium and endites typical. Sternum rather large, sub-ovoid; hind coxae separated by nearly one

of their diameters. Legs moderately short and slender; spines typical, with the following modifications:

I: T — 11, 14.

II: T — 11, 14.

III:

IV: T — 12.

Measurements:

	FEMALE HOLOTYPE	PARATYPE	AVERAGE	RATIO
Length	3.50 mm.	3.80	3.65	225
Carapace:				
Length	1.50	1.75	1.62	100
Width	1.05	1.28	1.16	72
Tibia-patella:				
I	1.27	(missing)	(1.38)	85
IV	1.30	(missing)	(1.42)	88

Distribution:

Type locality: Itasca Park, Minnesota. (aW95°15':N47°15') May 30, 1932, W. J. Gertsch, collector. Female holotype (American Museum), female paratype (Univ. Utah Collection).

Cicurina arcuata Keyserling

Pl. VI, figs. 46-47; Pl. XI, figs. 84-85.

Cicurina arcuata Keyserling, 1887, Verh. zool.-bot. Ges. Wien, 37:460; Pl. 6, fig. 25.

Cicurina complicata Emerton, 1889, Trans. Conn. Acad. Sci., 8:195; Pl. 7, figs. 2a, 7.

C. arcuata Keys., Simon, 1898, Hist. Nat. Araign., 2:265.

Cicurina complicata Em., Emerton, 1902, Common Spiders, p. 102; Figs. 246-249.

C. arcuata Keys., Petrunkevitch, 1911, Catalogue, p. 530.

C. arcuata, Comstock, 1912, Spider Book, p. 596.

Cicurina robusta (in part), Exline, 1933, Amer. Mus. Novitates, No. 850:20.

Color: Carapace yellowish to brown. Chelicerae, labium, and endites orange to reddish brown or chestnut. Sternum yellow to dusky brown. Legs yellow to reddish brown, darker distally. Abdomen pale gray, with dark gray spots and mottlings, heavier above and around spinnerets; a series of chevron-like marks on posterior half of dorsum. Venter more or less spotted. Dark areas of abdomen vary much in extent and density.

Structure: Height of clypeus not more than one diameter of an AS eye. Anterior eye row procurved; AM eyes $\frac{1}{2}$ to $\frac{2}{3}$ diameter of AS eyes, smaller than PM eyes; eyes less than the radius of an AM eye apart. Posterior row straight or slightly procurved; PM eyes one diameter apart, slightly closer to the side eyes, or sometimes nearly

equidistant. Chelicerae moderately to strongly geniculate; frontal spines weak; teeth or hind margin of fang groove essentially typical. Labium wider than long. Legs typical; spines vary from the usual pattern thus:

I: F — 6a; T — 11, 14 (11 sometimes present on male).

II: T — 14, \pm 11 (small when present); M \pm 4.

III: F — 3.

IV: F — 3; T \mp 12 (usually present on male).

Male differs from the female in the usual manner.

Measurements:		Females (25)		
		AVERAGE	EXTREMES	RATIO
Length		5.40 mm.	3.70 - 7.00	223
Carapace:				
Length		2.42	1.66 - 3.10	100
Width		1.68	1.12 - 2.15	69
Tibia-patella:				
I		2.13	1.50 - 2.75	88
IV		2.28	1.60 - 3.00	94
Males (7)				
Length		4.93 mm.	4.30 - 5.65	208
Carapace:				
Length		2.37	2.20 - 2.60	100
Width		1.90	1.76 - 2.05	80
Tibia-patella:				
I		2.36	2.22 - 2.52	100
IV		2.43	2.30 - 2.60	103

Distribution:

Type locality: "Clear Creek Co., Colorado; Rock Island, Illinois; Washington; Minnesota; Lake Superior." Male and female types, Keyserling (Marx Collection, National Museum, Washington, D. C.) (The type material evidently contains more than one species; Keyserling's description fits the species described here.)

Probable range: Eastern U. S. and Canada, between 30° and 55° north latitude, and east of 95° west longitude to the Atlantic.

Known localities:

70·42 R (Salem, Mass., Emerton).

71·42 R (Milton, Mass., Emerton (Type locality of *complanata*); Sharon, Mass., Emerton).

72·42 R (Northfield, Mass., Emerton).

73·40 R (Sea Cliff, Long Is., N. Y., Exline; Alpine, N. J. Exline).

- *73·41 ! (Haverstraw, N. Y.; Norwalk, Conn., W. J. Gertsch, collector).
 *73·43 ! (Brant Lake, N. Y.).
 74·40 R (Roselle Park, N. J., Exline).
 74·41 ! (Cornwall, N. Y., Exline; Accord, N. Y.; Sloatsburg, N. Y.).
 75·45 R (Chelsea, Quebec, Emerton).
 *76·38 ! (College Park, Maryland).
 *76·41 ! (Orangeville, Pa.).
 76·42 ! (Many localities).
 77·38 R (Falls Church, Va., Exline).
 *77·42 ! (Lake Keuka, N. Y.).
 80·40 R (Salineville, Ohio, Exline).
 *82·39 ! (Rockbridge, Ohio, W. M. Barrows, collector).
 83·35 ! (Montvale, Tenn., Exline; Macon Co., N. C.).
 83·36 ! (Cumberland Gap, Tenn.).
 *84·33 ! (Stone Mt., Ga.; Atlanta, Ga.).
 *86·34 ! (Monte Sano, Alabama).
 *86·40 ! (Urbana, Ill.).
 92·38 ! (Columbia, Mo.; Rocheport, Mo., Exline).
 *94·39 ! (Kansas City, Kan., June 8, 1933, W. Ivie, collector).
 R (Louisiana, Simon (type locality of *atomaria*)).

Cicurina deserticola Chamberlin and Ivie, n. sp.

Pl. VII, fig. 51.

Color: Carapace, sternum, and legs yellowish to orange, the distal part of the legs darker than the basal part. Mouthparts orange to light chestnut, the chelicerae a little darker than the labium and endites. Abdomen pale gray to yellowish gray, without markings.

Structure: Carapace moderately low. Eye area occupying about one half the width of the head. Posterior eye row slightly procurved, rarely straight; PM eyes larger than the AM eyes, a diameter or slightly more apart, closer to the side eyes. Teeth on hind margin of fang groove typically 3 teeth and 2 denticles, or a spur, 2 teeth, and 2 denticles. Legs long and slender; tibia-patella IV longer than the carapace; tibia IV not swollen in male; spines typical, except:

Female	Male
I: T — 5; M \pm 8.	I: M + 4, 5, 8a, 15.
II: M — 6.	II: M + 4, 5, \pm 8a.
III: M \pm A (usually reduced when present).	III: M + A.
IV: T \pm 12; M + A.	IV: M + A (spines very long).

Abdomen tends to be elongate and slender. Spinnerets typical. Epigynum is of the *robusta* type, with a large lateral loop extending well forward, as in *arcuata*, and with a large forward loop on section E of the connecting canal. Palpus similar to that of *robusta*, but a little more elongate in the cymbium and tibial process.

Measurements:		Females (11)		
		AVERAGE	EXTREMES	RATIO
Length		6.47 mm.	5.00 - 7.50	239
Carapace:				
Length		2.71	2.10 - 3.20	100
Width		1.91	1.55 - 2.30	70
Tibia-patella:				
I		2.60	2.00 - 3.00	96
IV		2.98	2.30 - 3.30	110
Males (5)				
Length		6.03 mm.	5.30 - 6.67	208
Carapace:				
Length		2.90	2.75 - 3.15	100
Width		2.24	2.10 - 2.48	77
Tibia-patella:				
I		2.94	2.83 - 3.33	101
IV		3.16	2.93 - 3.58	109

Distribution:

Type locality: Ferron, Utah (Will[°]8':N39°6').

Probable range: Western U. S., between 35° and 40° north latitude, and between 107° and 115° west longitude.

Known localities:

- *109·37 ! (Bluff, Utah, female).
- *109·38 ! (West of Thompson, Utah).
- *110·38 ! (Henry Mts., Utah (Mt. Ellen)).
- *110·39 ! (Between Wellington and Price, Utah, male).
- *111·38 ! (Bicknell, Utah).
- *111·39 ! (Type locality).
- *112·36 ! (Kaibab Forest, Arizona).
- *112·37 ! (Tropic, Utah).
- *113·37 ! (Pintura, Utah; Santa Clara, Utah).

Cicurina parma Chamberlin and Ivie, n. sp.

Pl. VII, fig. 50.

Color: Carapace, legs, and sternum brownish orange. Mouth-parts darker and more reddish. Abdomen light gray, without markings.

Structure: General body structure stout. Carapace of medium height. Height of clypeus about two diameters of an AS eye. The eye area occupying about half of the width of the head. AM eyes equal to or larger than the PM eyes. Anterior eyes less than a radius of an AM eye apart. Posterior eye row straight or slightly procurved; PM eyes nearly $1\frac{1}{2}$ diameters apart, a full diameter from the side eyes. Chelicerae moderately geniculate. Hind margin of fang groove with two teeth and three denticles, or three teeth and two denticles. Legs moderately stout; spines typical, except as follows:

I:

II: M + 4.

III: M + A.

IV: M + A.

Measurements: Females from Parma, Idaho

	1	2	3	AVERAGE	RATIO
Length	9.00	8.00	10.00	9.00	225
Carapace:					
Length	3.85	3.60	4.55	4.00	100
Width	2.80	2.57	3.30	2.87	72
Tibia-patella:					
I	3.90	3.60	4.30	3.93	98
IV	4.25	4.00	4.80	4.35	109

Female from Utah

	1	RATIO
Length	(9.50)	-----
Carapace:		
Length	4.20	100
Width	3.33	80
Tibia-patella:		
I	4.60	110
IV	5.10	121

Distribution:

Type locality: 3 miles East of Parma, Idaho (W116°55':-N43°48'). Female holotype, female paratypes. Under boards on damp floor of an old vegetable cellar.

Probable range: Western U. S., between 110° and 120° west longitude, and between 36° and 45° north latitude.

Known localities:

*112·37 ! (Bryce Canyon, Utah, female).

*116·43 ! (Type locality).

Cicurina robusta Simon

Pl. VII, fig. 53; Pl. XI, fig. 87.

Cicurina robusta Simon, 1886, CR. Soc. Ent. Belgique, 30:40.

C. robusta Simon, Petrunkevitch, 1911, Catalogue, p. 530.

C. robusta Simon, Chamberlin and Ivie, 1933, Bull. Univ. Utah, 23(4):46 (Biol. Ser. 2(2):46).

C. robusta Simon, Exline, 1936, Amer. Mus. Novitates, No. 850:20; Figs. 21, 21a.

Color: Carapace orange to orange brown. Chelicerae reddish orange to reddish brown. Labium and endites orange to light reddish brown with whitish tips. Sternum and legs orange to orange brown. Abdomen light gray, without markings.

Structure: Height of clypeus a little more than one diameter of an AS eye. Eye area occupying slightly less than one half width of the head. Posterior eye row slightly procurved; PM eyes about 1 1/2 diameters apart, one diameter from the side eyes. Tibia IV of male slightly swollen; spines of legs typical, except:

I: $T \pm 5$ (always present on male).

II:

III:

IV: $M + 7$.

Measurements:

Females (11)

	AVERAGE	EXTREMES	RATIO
Length	6.92 mm.	5.80 - 9.10	234
Carapace:			
Length	2.96	2.60 - 3.55	100
Width	2.15	1.90 - 2.67	73
Tibia-patella:			
I	2.56	2.25 - 3.00	87
IV	2.73	2.40 - 3.30	92

Males (5)

Length	5.75 mm.	5.00 - 6.70	237
Carapace:			
Length	2.43	2.15 - 2.95	100
Width	1.84	1.67 - 2.20	76
Tibia-patella:			
I	2.38	2.15 - 2.73	98
IV	2.38	2.15 - 2.73	98

Distribution:

Type locality: "Colorado." Female holotype (probably in Museum National d'Histoire Naturelle, Paris).

Probable range: Mountains within area between 104° and 115° west longitude, and between 35° and 50° north latitude.

Known localities:

- 105.38 ! (Pikes Peak Canyon, Colorado, Exline).
 *106.41 ! (Centennial, Wyoming, female, Irving Blake, collector).
 *109.37 ! (Verdure, Utah).
 *110.44 ! (Warm River, Yellowstone Park, Wyoming).
 *111.39 ! (Ferron, Utah).
 111.40 ! (Wasatch Mts., Utah).
 113.41 ! (Raft River Mts., Utah, Chamberlin and Ivie, 1933).

***Cicurina garrina* Chamberlin**

Pl. VII, fig. 52.

Cicurina garrina Chamberlin, 1919, Ann. Ent. Soc. America, 12:256; Pl. 19, fig. 9.

Cicurina robusta (in part), Chamberlin and Ivie, 1933, Bull. Univ. Utah, 23(4):46 (Biol. Ser. 2(2):46).

Color: Carapace orange brown. Chelicerae light to medium chestnut. Labium and endites reddish brown, with light tips. Sternum orange, with the side margins gradually darkening into brown. Legs orange brown. Abdomen pale gray, with more or less distinct dark markings above, especially on posterior part and around spinnerets; markings often much faded.

Structure: Eye area occupying a little less than one half the width of the head. Clypeus about $1\frac{1}{2}$ diameters of an AS eye. Posterior eye row slightly procurved; PM eyes $1\frac{1}{3}$ to $1\frac{3}{4}$ diameters apart, scarcely a diameter from the side eyes. Hind margin of fang groove usually with three teeth and three denticles, the denticles very small and close together. Hind tibia of male slightly swollen; spines typical, except spine 5 is frequently missing from tibia I of the female, and spine 7 is present on metatarsus IV.

Measurements:

Females (28)

	AVERAGE	EXTREMES	RATIO
Length	7.53	5.00 - 9.75	235
Carapace:			
Length	3.20	2.30 - 3.75	100
Width	2.28	1.50 - 2.60	71
Tibia-patella:			
I	2.72	1.92 - 3.20	85
IV	2.96	2.12 - 3.48	92

Males (6)			
	AVERAGE	EXTREMES	RATIO
Length	5.80	5.30 - 6.30	213
Carapace:			
Length	2.72	2.60 - 2.93	100
Width	2.12	2.05 - 2.26	78
Tibia-patella:			
I	2.55	2.40 - 2.80	94
IV	2.68	2.50 - 3.00	98

Distribution:

Type locality: Chalk Creek, Uintah Mts., Utah ($W111^{\circ}:N40^{\circ}$), elevation 8000 ft. Female holotype (M.C.Z.).

Probable range: High mountains within area between 108° and 112° degrees west longitude and between 37° and 42° north latitude.

Known localities:

*109·38 ! (LaSal Mts., Utah).

*110·40 ! (Mirror Lake, Uintah Mts., Utah).

*111·38 ! (Fish Lake, Utah).

111·40 ! (Type locality; Smith and Morehouse Can., Uintah Mts.; Wasatch Mts., Utah).

Remarks: This species is close to *robusta*, but differs in having markings on the abdomen. The lateral loop of the connecting canal of the epigynum does not extend so far anteriorly as in *robusta*. The palpi of the males are very similar.

Cicurina tortuba Chamberlin and Ivie, n. sp.

Pl. VII, fig. 54.

Color: Carapace, legs, and sternum orange, the sternum brownish around the margin. Labium and endites orange brown with whitish tips. Chelicerae reddish brown. Abdomen light gray, with some very faint markings on the posterior part.

Structure: Structure very similar to that of *robusta* and *garrina*. Eyes small; eye area occupying one half the width of the head. Height of clypeus a little more than the diameter of an AS eye. Anterior eye row procurved; AM eyes much smaller than the PM eyes, about a radius apart, a little farther from the side eyes. Chelicerae strongly geniculate; hind margin of fang groove with 2 or 3 teeth and 2 small denticles. Legs and spines as in *robusta*.

Measurements:	FEMALE HOLOTYPE	RATIO
Length	7.70 mm.	237
Carapace:		
Length	3.25	100
Width	2.33	72
Tibia-patella:		
I	2.86	88
IV	3.12	96

Distribution:

Type locality: Mateo Co., California (aW122°25':N37°35'), October 30, 1921, J. C. Chamberlin, collector. Female holotype.

Cicurina utahana Chamberlin

Pl. VIII, fig. 56; Pl. XI, figs. 88-89.

Cicurina utahana Chamberlin, 1913, Ann. Ent. Soc. America, 12:257; Pl. 19, fig. 8.

Cicurina utahana andersis Chamberlin, Ibid., p. 257.

Cicurina robusta, (in part), Exline, 1936, Amer. Mus. Novitates, No. 850:20.

Color: General color light. Carapace, legs, and sternum yellowish orange. Endites and labium orange with pale tips. Chelicerae light brownish orange. Abdomen whitish gray or light gray.

Structure: General shape rather flat and slender. Carapace low; height of clypeus a little more than one diameter of an AS eye. Eye area occupying about half the width of the head. Posterior eye row straight or very slightly procurved; PM eyes typically $1\frac{1}{2}$ diameters apart, one diameter from the side eyes. PM eyes larger than the AM eyes. Chelicerae stout, strongly geniculate; hind margin of fang groove normally with three teeth and three denticles. Spines on legs typical, except:

Female	Male
I: T \mp 5.	I: M + 4, 5, 6.
II: M — 6.	II: M + 4, 5.
III: typical	III: typical
IV: typical	IV: typical

Hind tibia of male slightly swollen. Abdomen slender. Epigynum similar to that of *robusta* in general pattern, tubes more slender. Palpus similar to that of *robusta*, but much shorter.

Measurements:		Females (11)		
		AVERAGE	EXTREMES	RATIO
Length		5.16	4.20 - 6.20	235
Carapace:				
Length		2.28	1.85 - 2.80	100
Width		1.66	1.30 - 1.90	73
Tibia-patella:				
I		2.00	1.75 - 2.40	88
IV		2.20	1.82 - 2.67	96
Males (6)				
Length		4.43	2.85 - 4.70	216
Carapace:				
Length		2.05	1.90 - 2.25	100
Width		1.59	1.45 - 1.80	78
Tibia-patella:				
I		1.93	1.75 - 2.30	94
IV		2.05	1.82 - 2.37	100

Distribution:

Type locality: Pine Canyon, Millard Co., Utah (W112°:N39°).
Female holotype (M.C.Z.).

Probable range: Between 105° and 120° west longitude, and between 30° and 45° north latitude.

Known localities:

	R	(San Geronimo, New Mexico (type locality of <i>C. u. anderis</i>).
*110·38	!	(Henry Mts., Utah).
*111·38	!	(Fish Lake, Utah).
*111·40	!	(North Fork Provo Riv., Uintah Mts.).
*111·41	!	(Liberty, Utah).
112·39	R	(Type locality).
*116·33	!	(Mt. Palomar, California).
*117·33	!	(Laguna Beach, California).
*117·34	!	(Claremont, California).

Cicurina arizona Chamberlin and Ivie, n. sp.

Pl. VII, fig. 55.

Color: Caparace light yellowish orange. Chelicerae reddish orange. Labium and endites orange. Sternum and legs yellowish orange. Abdomen pale grayish.

Structure: Eyes small; eye area occupying about one half the width of the head. Height of clypeus a full diameter of an AS eye. AM eyes nearly as large as the PM eyes, scarcely more than a half

radius apart, less than a radius from the side eyes. Posterior row procurved; PM eyes nearly two diameters apart, a little more than one diameter from the side eyes. Chelicerae stout, moderately geniculate; hind margin of fang groove with two blunt teeth and three denticles. Spines on legs typical, with the following modifications:

I: T — 11, 14.

II: T — 14, + 11 (small).

III and IV: typical.

(Two females from New Mexico appear to be this species, although they exhibit some differences. These differences are mainly: Larger size; epigynum with a slight lateral loop in the connecting canal; and spines 11 and 14 present on tibiae I and II. They are included here tentatively.)

Measurements:	Females Arizona		New Mexico			
	HOLOTYPE	RATIO	1	2	AVERAGE	RATIO
Length	5.35	223	6.67	6.80	6.73	226
Carapace:						
Length	2.40	100	2.67	3.30	2.98	100
Width	1.75	73	1.90	2.25	2.07	69
Tibia-patella:						
I	2.20	92	2.27	2.90	2.58	87
IV	2.30	96	2.50	3.10	2.80	94

Distribution:

Type locality: Aspen Spring, San Francisco Mts., Flagstaff, Arizona (W111°40':N35°5'), August 10, 1934, Bell, Collector.

Female holotype (American Museum).

Other locality: Camp Mary White, Otero Co., New Mexico, August, 1934, S. Mulaik, Collector. Two females.

Subgenus CICURATA Chamberlin and Ivie, new

Since this subgenus is known from only the one species, the characters given for that species will for the time being also be the characters for the subgenus. A few features, however, may be noted here.

The eyes are entirely absent; the size is probably medium; the legs rather long, the hind tibia-patella being decidedly longer than the carapace; leg IV has spines B and C present on the tibia.

The only known locality is "from the cave near Austin Texas."

Cicurina buwata Chamberlin and Ivie, n. sp.

Pl. XII, fig. 94.

Color: Carapace, legs and underparts light amber yellow. Chelicerae orange. Abdomen pale gray, without markings.

Structure: Carapace of typical shape, although more slender than usual. Profile of head rounded in front. Eyes completely absent. Chelicerae strongly geniculate at base. Hind margin of fang groove with a blunt spur, three teeth, and two denticles. Frontal spines of chelicerae long and slender. Sternum ovate. Legs long, moderately slender; spines slender, of moderate length, distribution typical, except:

I: F — 3.

II: F — 3; T + 10 (small); M + 5.

III: F — 3; T + B, C.

IV: F — 3; T — 12, + B, C.

Spinnerets moderately long.

Measurements:	IMMATURE FEMALE	RATIO
Length	4.15 mm.	189
Carapace:		
Length	2.20	100
Width	1.33	60
Tibia-patella:		
I	2.27	103
IV	2.29	104

Distribution:

Type locality: "Cave near Austin, Texas. March 12-18, 1903. J. H. Comstock." (Probably aW97°58':N30°21'). Immature holotype (Cornell University).

Remarks: Although the eyes are totally lacking, the other features are distinctly those of *Cicurina*. This species is placed tentatively in a separate subgenus; the study of adults, however, will be necessary to confirm this position positively.

Subgenus **CICURELLA** Chamberlin and Ivie, new.

Color: Carapace clear yellow to orange yellow. Chelicerae orange. Labium and endites light orange with pale tips. Sternum whitish to light yellow. Legs light yellow basally, becoming darker yellow distally. Abdomen white to pale gray without markings.

Size: Usually less than 3.00 mm. in length, ranging downward to less than 2.00 mm.

Structure: Carapace low; head wide in front; cervical indentations obsolete. Eye area occupying only half the width of the head or less. Eyes 8 or 6. The AM eyes are usually absent; when present, they are vestigial, or small. All eyes sometimes more or less degenerate. Posterior eye row usually straight; PM eyes $1\frac{1}{2}$ to 2 diameters apart, less than one diameter from the side eyes. Height of clypeus usually less than one diameter of an AS eye. Carapace of male modified in the usual manner.

Chelicerae only slightly geniculate in front; vertical; frontal spines typical; hind margin of fang groove usually with five small teeth, being largest nearest the base of the fang and gradually becoming smaller medially. Sternum large, sub-ovoid. Labium much wider than long, about half as long as the endites. Endites normal, but less robust than in some of the larger species.

Palpus of male typical in essential details. Cymbium short; hook of conductor extended into a long slender process. Legs moderately short; tibia-patella IV shorter than the carapace; spines usually vary from the typical thus:

I: F — 3; T — 11, 14.

II: F — 3; T — 11, 14; 9 and 10 sometimes present as small bristles.

III: F — 3; T \pm 12, (9, 12, 11, and 14 tend to be reduced, sometimes absent) + B, C.

IV: F — 3; T — 12, + B, C.

Hairs on legs coarse; spines usually slender and sometimes difficult to differentiate from the hairs.

Abdomen low and moderately slender. Spinnerets typical. Epigynum of typical pattern in general. Opening wide and more or less slit-like. Spermathecum double, consisting of a large bulb anteriorly, with a small posterior bulb connected to it by a short canal of varying thickness. The connecting canal empties into the small posterior bulb; the fertilization duct originates from the large bulb (see fig. 11).

Distribution: All known species are from Texas. It is probable that others will be found in Mexico. Habitat on the under side of stones on the ground. Best time for adults apparently in December and January.

Classification: The species of this subgenus fall into two main divisions, as indicated in the list of species. These may be characterized thus:

Division 1. Anterior median eyes present or vestigial; small bulb of spermathecum narrowly joined to the large bulb.

Division 2. Anterior median eyes entirely absent; small bulb of spermathecum broadly joined to the large bulb.

Type Species: *Cicurina microps* Chamberlin and Ivie, n. sp.

Cicurina riogrande Gertsch and Mulaik, n. sp.

Pl. VIII, figs. 57-58.

Color: Typical for subgenus.

Structure: Carapace low, head wide in front; cervical indentations obsolete. Eyes 8, small; eye area occupying less than half width of the head. Clypeus about $\frac{3}{5}$ diameter of an AS eye. Anterior eye row procurved; AM eyes very small, less than $\frac{1}{2}$ the diameter of the AS eyes, scarcely more than a radius apart, about same distance from the side eyes. Posterior eyes much smaller than the AS eyes; PM eyes smaller than the PS eyes; PM eyes about 2 diameters apart, a scant diameter from the side eyes. Chelicerae moderately geniculate. Frontal spines prominent, crossed. Teeth on hind margin of fang groove consist of a small spur, three teeth, and two denticles. Sternum sub-oval about $\frac{4}{5}$ as wide as long. Legs moderately stout; spines:

I: T — 11, 14.

II: T — 11, 14; M — 6.

III: M — 7.

IV: T — 12, + C.

Measurements:	FEMALE HOLOTYPE	RATIO
Length	2.80 mm.	207
Carapace:		
Length	1.35	100
Width .....	.90	67
Head .....	.60	
Tibia-patella:		
I	1.10	81
IV	1.15	85

Distribution:

Type locality: 5 miles east of Riogrande, Texas (W98°40': N26°26'), January 12, 1939, Stanley Mulaik, collector. Female holotype (American Museum).

Cicurina rudimentops Chamberlin and Ivie, n. sp.

Pl. VIII, fig. 59.

Color: typical for the group.

Structure: Height of clypeus slightly less than the diameter of an AS eye. AS eyes nearly 2 diameters apart; AM eyes present as small indistinct white dots. Posterior row straight; PM eyes nearly 2 diameters apart, a little less than a diameter from the side eyes.

Chelicerae typical for the group. Spines of legs vary from the typical formula thus:

I: T — 11, 14.

II: T — 11, 14.

III: T — 9, 12, 11, 14, + C.

IV: T — 12, + C.

Measurements:

	FEMALE HOLOTYPE	RATIO
Length	2.10 mm.	200
Carapace:		
Length	1.05	100
Width .....	.73	70
Tibia-patella:		
I .....	.80	76
IV .....	.90	86

Distribution:

Type locality: 17 miles north of Alice, Texas (W98°5':N27°55'), December, 1939, D. and S. Mulaik, collectors. Female holotype.

Cicurina microps Chamberlin and Ivie, n. sp.

Pl. VIII, figs. 61-62; Pl. XII, fig. 91.

Color: typical for the group.

Structure: Carapace with head $\frac{3}{4}$ width of the thoracic part; cervical indentations obscure. Eyes 6, in two triads; very small; AM eyes wanting, the others appear as small pearly white spots, without black outlines. Clypeus a little more than a diameter of an AS eye. Anterior eyes about 3 diameters apart, about a radius from each of the other eyes. Posterior row straight; PM eyes about $2\frac{1}{2}$ diameters apart, less than a diameter from the side eyes. Chelicerae geniculate, typical. Spines of the legs typical, except:

Female

I: T — 11, 14.

II: T — 11, 14.

III: T — 12; M — 7.

I: T — 12.

Male

I: M + 15 (Bristle).

II: T + 9, 10; 11, 14 (small);
12 and 13 very
long; M + 5.

III: T + B, C.

IV: T + B, C.

Measurements:

	FEMALE ALLOTYPE	RATIO	MALE HOLOTYPE	RATIO
Length	2.80 mm.	250	3.20 mm.	213
Carapace:				
Length	1.12	100	1.50	100
Width .....	.70	62	1.00	67
Head .....	.50			
Tibia-patella:				
I .....	.88	79	1.30	87
IV .....	.92	82	1.33	89

Distribution:

Type locality: Ravan Ranch, south of Kerrville, Texas (W99°7':-N29°55'), December 16, 1939, D. and S. Mulaik, Collectors. Male holotype.

Known localities:

*99·29 (Type locality).

*99·31 (So. of Brady, Texas, female allotype, December 15, 1939, D. and So. Mulaik, collectors).

***Cicurina texana* (Gertsch)**

Pl. VIII, fig. 64; Pl. XII, fig. 90.

Chorizonmma texana Gertsch, 1935, Amer. Mus. Novitates, No. 792:15; figs. 36-37. Male.

Color: typical for the group.

Structure: Female. Clypeus rather slender. Eyes 6. Clypeus less than $\frac{1}{2}$ diameter of an AS eye. Anterior eyes about one diameter apart. Posterior row straight; PM eyes a little more than a diameter apart, about a radius from the side eyes. Anterior eyes less than a radius from the PM eyes. Spines on legs typical, except:

I: T — 11, 14.

II: T — 11, 14, + 9, 10 (bristle-like).

III: T — 12, 14.

IV: T — 12, + C.

Measurements:

	Females				Male	
	1	2	Ave.	RATIO	HOLOTYPE	RATIO
Length	2.50	2.45	2.47	2.47	2.45	223
Carapace:						
Length	1.00	1.00	1.00	100	1.10	100
Width .....	.65	.70	.67	67	.85	77
Tibia-patella:						
I .....	.80	.90	.85	85	.90	82
IV .....	.85	.90	.87	87	.97	88

Distribution:

Type locality: Llano, Texas (W98°37':N30°45'). Male holotype (American Museum).

Known localities:

- 98·30 (Type locality, Gertsch).
 *99·29 (Raven Ranch, Kerr Co., Texas, female, August, 1939; female, December, 1939, D. and S. Mulaik, collectors).

Cicurina hexops Chamberlin and Ivie, n. sp.

Pl. XII, fig. 92.

Color: typical for the group.

Structure: Carapace broad and flat. Eyes 6, partially degenerated. Height of clypeus less than one diameter of an AS eye. AS eyes $1\frac{1}{2}$ to 2 diameters apart. Posterior row straight; PM eyes about $1\frac{1}{2}$ diameters apart, about half as far from the side eyes. Chelicerae slender, vertical, with five teeth on hind margin of the fang groove. Spines of legs differ from the typical formula thus:

I: T — 11, 14.

II: T — 11, 14; M — 6.

III: T — 12, 14; 11 weak.

IV: T — 12.

Measurements:

	MALE HOLOTYPE	PARATYPE	AVERAGE	RATIO
Length	2.15 mm.	2.40 mm.	2.27	222
Carapace:				
Length .....	.90	1.15	1.02	100
Width .....	.80	.80	.80	78
Tibia-patella:				
I .....	.70	.83	.76	74
IV .....	.75	.88	.81	79

Distribution:

Type locality: Walter Valley, Texas (W100°50':N31°35'), December, 1939, D. and S. Mulaik, collectors. Male holotype, male paratype.

Cicurina pampa Chamberlin and Ivie, n. sp.

Pl. VIII, fig. 60.

Color: typical for the group.

Structure: Height of clypeus about $\frac{3}{5}$ diameter of an AS eye. Eyes 6; anterior eyes about one diameter apart. PM eyes about

1 $\frac{1}{2}$ diameters apart, scarcely a radius from the side eyes. Chelicerae with 5 nearly equal teeth on hind margin of the fang groove. Spines of legs modified thus:

I: T — 11, 14.

II: T — 11, 14; M — 6.

III: T 9, 11, 14 reduced, — 12; M — 7.

IV: T — 12.

Measurements:	FEMALE HOLOTYPE	RATIO
Length	2.10 mm.	221
Carapace:		
Length .....	.95	100
Width .....	.68	71
Tibia-patella:		
I .....	.77	81
IV .....	.80	84

Distribution:

Type locality: Kendall Co., Texas (aW98°45':N29°50'), December, 1939, D. and S. Mulaik, collectors. Female holotype.

Cicurina minorata (Gertsch and Davis)

Pl. VIII, fig. 63; Pl. XII, fig. 96.

Chorizomma minorata Gertsch and Davis, 1936, Amer. Mus. Novitates, No. 881:6; fig. 8.

Color: Carapace light orange yellow; chelicerae scarcely darker. Labium and endites yellowish orange. Sternum and legs pale yellow. Abdomen whitish.

Structure: Size very small. Carapace typical for the group. Eyes 6; anterior eyes largest, about one diameter apart. Posterior row straight; PM eyes about 1 $\frac{1}{4}$ diameters apart, half as far from the side eyes. Height of clypeus about $\frac{2}{3}$ diameter of an AS eye. Chelicerae moderately geniculate. Sternum large, sub-ovate, separating hind coxae by a full diameter of one of them. Labium wide at base the greatest width nearly twice the length. Legs essentially typical; spines of metatarsi slender; hairs coarse, making it difficult to distinguish the spines from the hairs. The spines reduced:

I: T — 5, 11, 14; M — 11, 14.

II: T — 11, 14.

III and IV missing from type.

Tarsus I nearly as long as the metatarsus.

Measurements:	FEMALE HOLOTYPE	RATIO
Length	1.65 mm.	226
Carapace:		
Length .....	.73	100
Width .....	.50	69
Tibia-patella:		
I .....	.60	82
IV	---	---

Distribution:

Type locality: San Antonio, Texas (aW98°30':N29°28'). Female allotype (American Museum).

Plate I.

1. Phylogenetic relationships of the species of *Cicurina*.

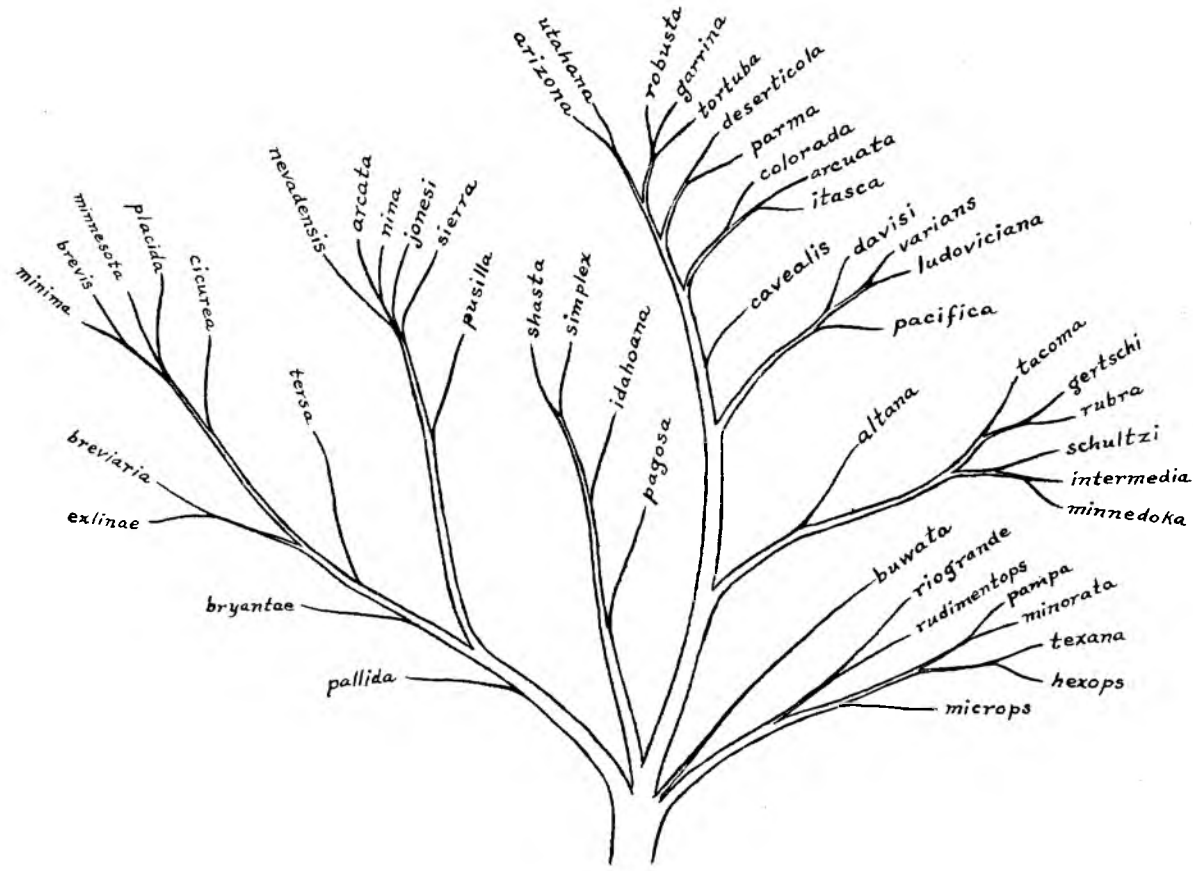
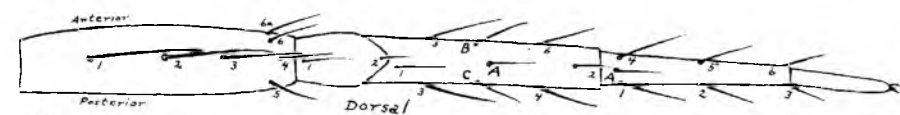
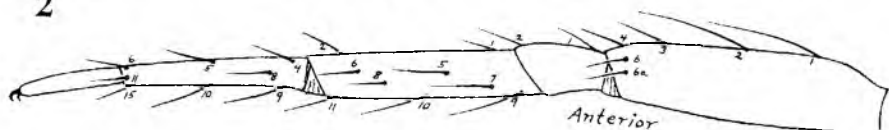


Plate II.

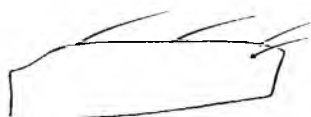
- 2-5. Diagrams of a leg to show the arrangement of the spines.
 2. Dorsal view.
 3. Anterior view.
 4. Posterior view.
 5. Ventral view.
6. Diagram of a femur, showing only three dorsal median spines.
7. Diagrams showing the typical arrangement of the spines on the distal ends of the femora, dorsal view.
8. Diagram of a simple form of epigynum (subgenus *Cicurina*).
9. Diagram of an epigynum of the subgenus *Cicurona*.
10. Diagram of an epigynum of the subgenus *Cicurusta*, showing the connecting canal divided into five sections, A to E.
11. Diagram of an epigynum of the subgenus *Cicurella*.



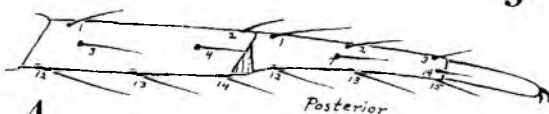
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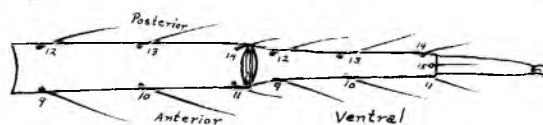
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6



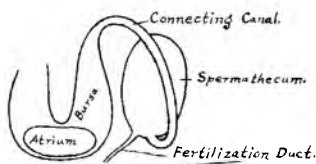
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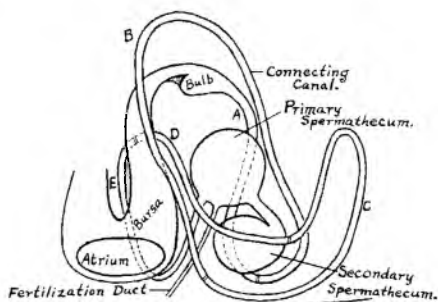
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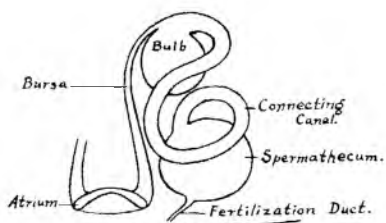
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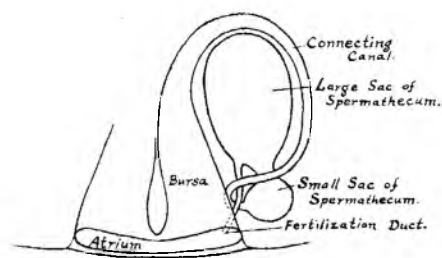
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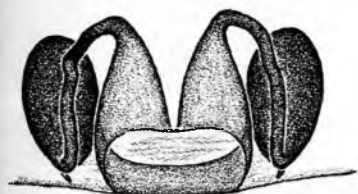
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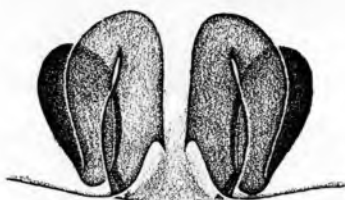
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Plate III.

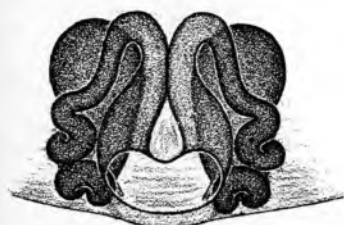
12. *Cicurina bryantae* Exline, epigynum, ventral view, cleared.
13. *Cicurina pallida* Keyserling, epigynum.
14. *Cicurina exlinae* Chamberlin and Ivie, n. sp., epigynum.
15. *Cicurina breviaria* Bishop and Crosby, epigynum.
16. *Cicurina brevis* Emerton, epigynum (Great Smoky Mts.).
17. *Cicurina brevis* Emerton, epigynum (Ithaca, N. Y.).
18. *Cicurina minnesota* Chamberlin and Ivie, n. sp., epigynum.
19. *Cicurina minima* Chamberlin and Ivie, n. sp., epigynum.
20. *Cicurina placida* Banks, epigynum.
21. *Cicurina cicurea* (Fabricius), epigynum.



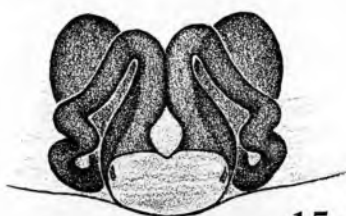
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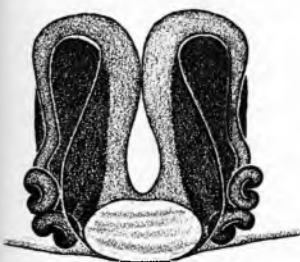
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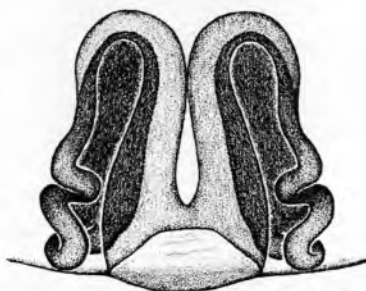
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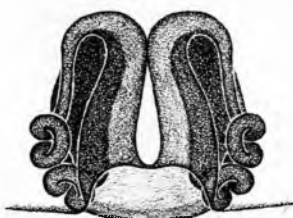
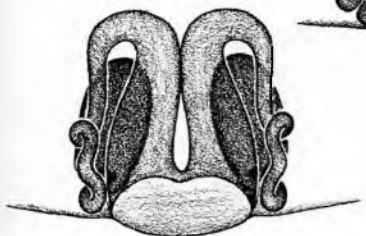


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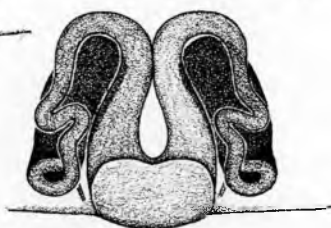
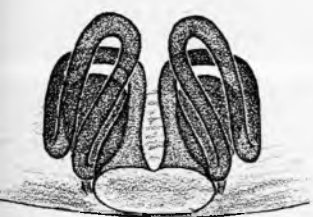
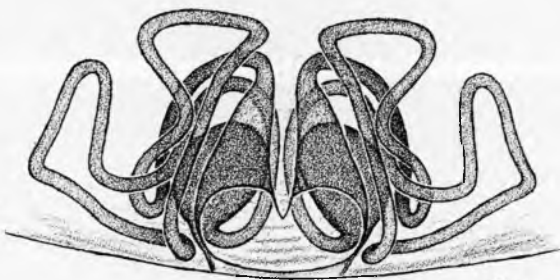


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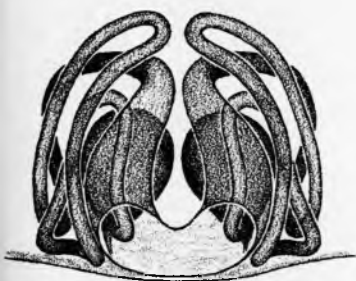
- 22. *Cicurina tersa* Simon, epigynum.
- 23. *Cicurina pusilla* (Simon), epigynum.
- 24. *Cicurina jonesi* Chamberlin and Ivie, n. sp., epigynum.
- 25. *Cicurina arcata* Chamberlin and Ivie, n. sp., epigynum.
- 26. *Cicurina sierra* Chamberlin and Ivie, n. sp., epigynum.
- 27. *Cicurina pagosa* Chamberlin and Ivie, n. sp., epigynum.
- 28. *Cicurina shasta* Chamberlin and Ivie, n. sp., epigynum.
- 29. *Cicurina simplex* Simon, epigynum.



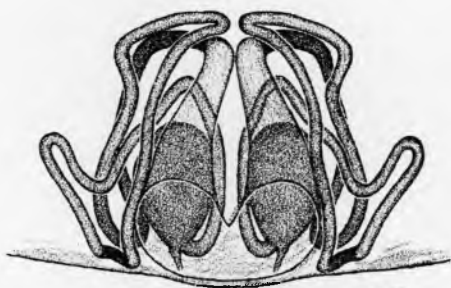
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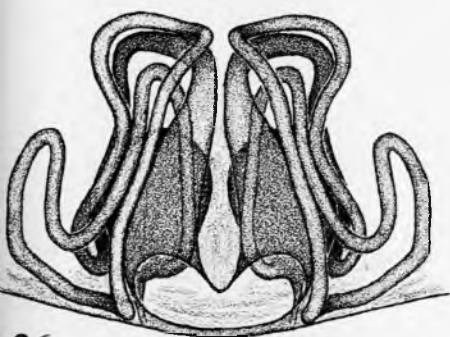
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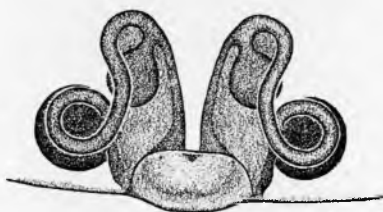
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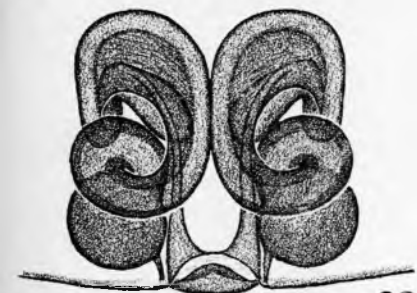
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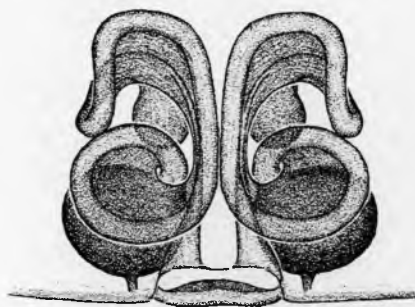
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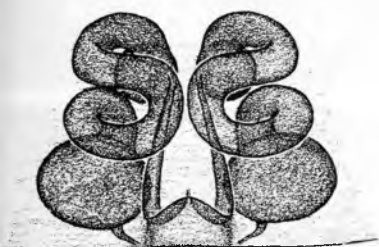
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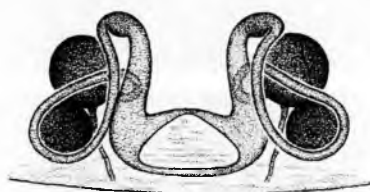
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Plate V.

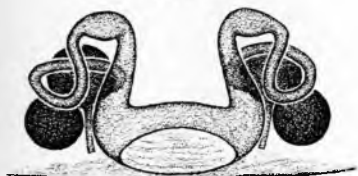
- 30. *Cicurina idahoana* Chamberlin, epigynum.
- 31. *Cicurina intermedia* Chamberlin and Ivie, epigynum (City Creek Canyon, near Salt Lake City, Utah.)
- 32. Same (Fish Lake, Utah).
- 33. Same (Lost Creek Reservoir, near Tamarack, Idaho).
- 34. Same (Raft River Mts., Utah, type locality).
- 35. *Cicurina schultzi* Exline, epigynum.
- 36. *Cicurina gertschi* Exline, epigynum, external view.
- 37. *Cicurina rubra* Chamberlin and Ivie, n. sp., epigynum.
- 38. *Cicurina tacoma* Chamberlin and Ivie, n. sp., epigynum.
- 39. *Cicurina minnedoka* Chamberlin and Ivie, n. sp., epigynum.



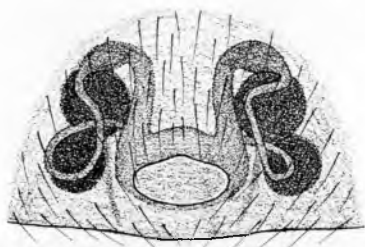
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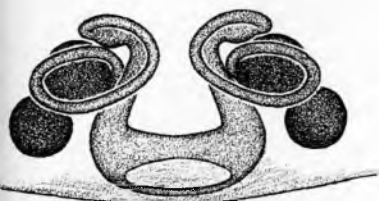
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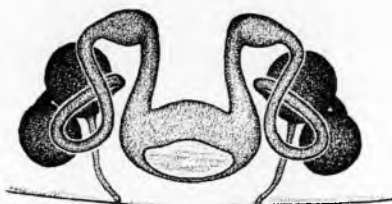
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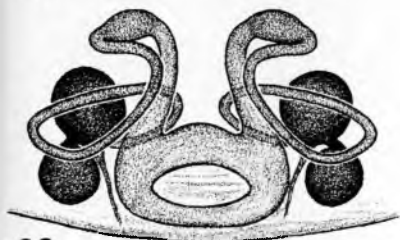
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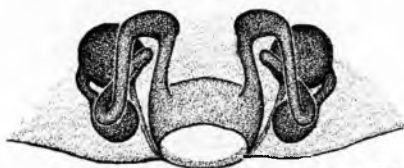
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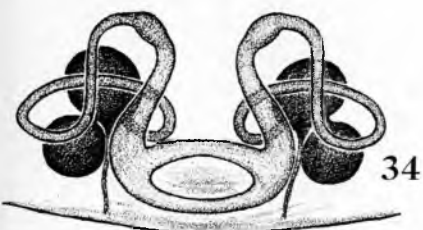
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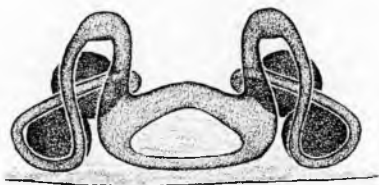
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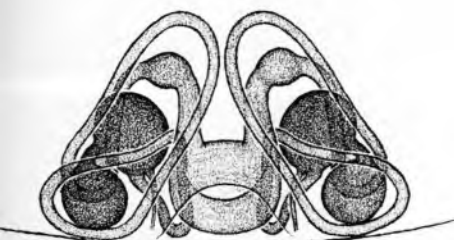
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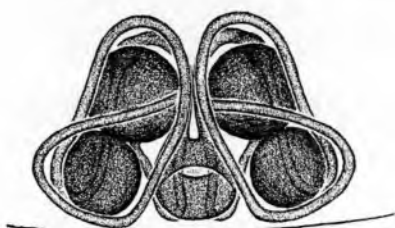
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Plate VI.

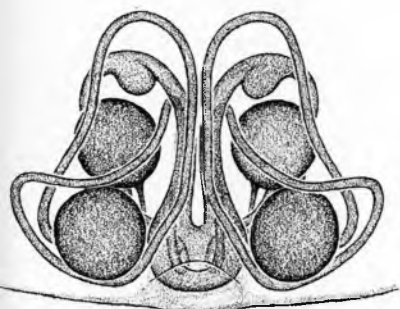
- 40. *Cicurina ludoviciana* Simon, epigynum.
- 41. *Cicurina davisi* Exline, epigynum.
- 42. *Cicurina varians* Gertsch and Ivie, n. sp., epigynum.
- 43. *Cicurina pacifica* Chamberlin and Ivie, n. sp., epigynum.
- 44. *Cicurina cavealis* Bishop and Crosby, epigynum.
- 45. Same, another form.
- 46. *Cicurina arcuata* Keyserling, epigynum (Rockbridge, Ohio).
- 47. Same (Cumberland Gap, Tennessee).



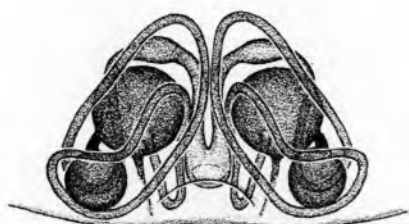
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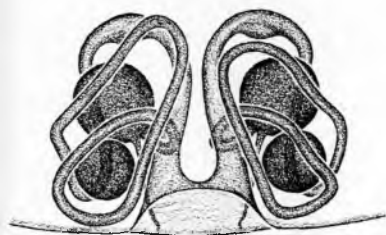
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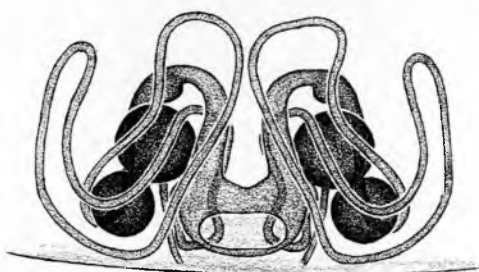
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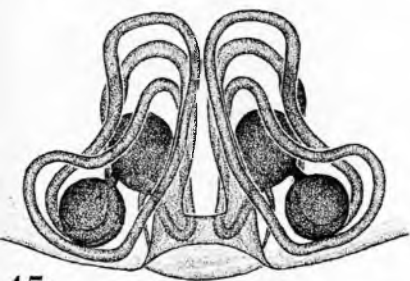
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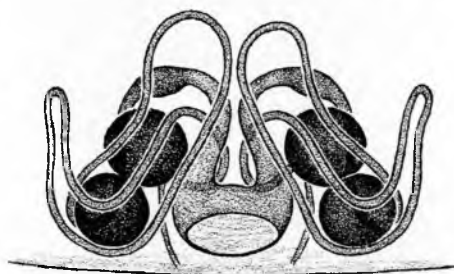
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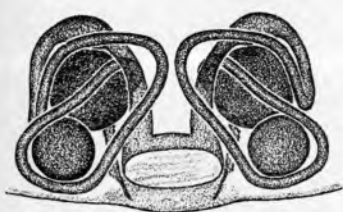
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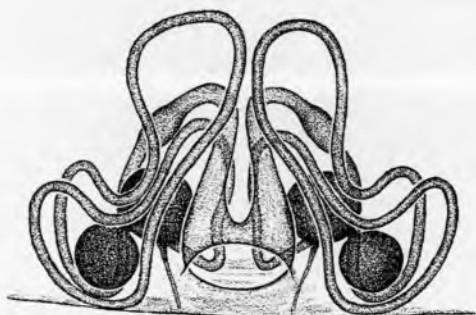
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Plate VII.

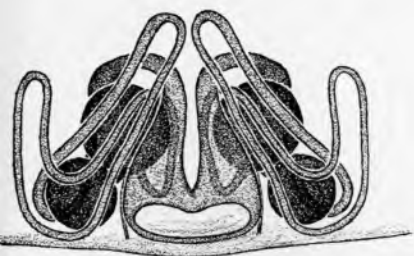
- 48. *Cicurina itasca* Chamberlin and Ivie, n. sp., epigynum.
- 49. *Cicurina colorada* Chamberlin and Ivie, n. sp., epigynum.
- 50. *Cicurina parma* Chamberlin and Ivie, n. sp., epigynum.
- 51. *Cicurina deserticola* Chamberlin and Ivie, n. sp., epigynum.
- 52. *Cicurina garrina* Chamberlin, epigynum.
- 53. *Cicurina robusta* Simon, epigynum.
- 54. *Cicurina tortuba* Chamberlin and Ivie, n. sp., epigynum.
- 55. *Cicurina arizona* Chamberlin and Ivie, n. sp., epigynum.



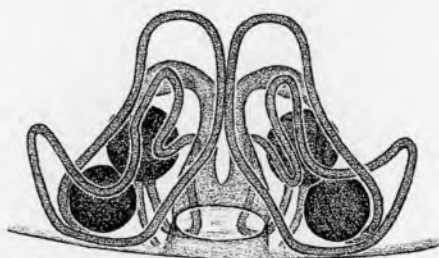
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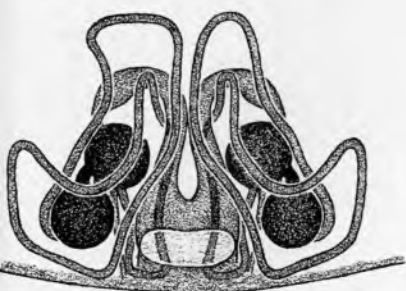
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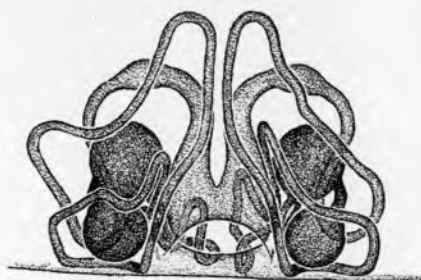
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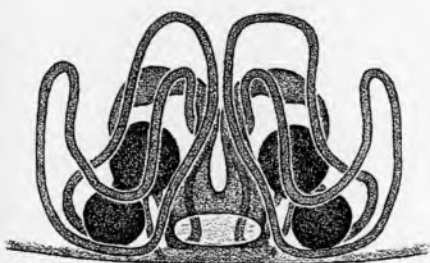
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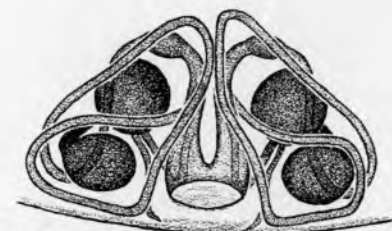
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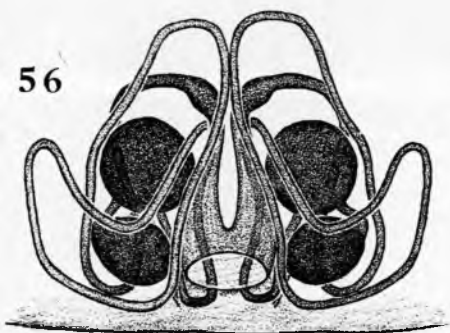


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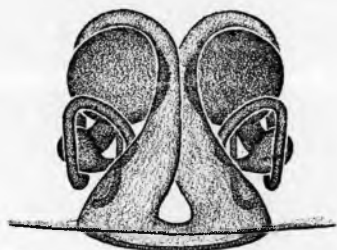
Plate VIII.

- 56. *Cicurina utahana* Chamberlin, epigynum.
- 57. *Cicurina riogrande* Gertsche and Mulaik, n. sp., epigynum, ventral view, cleared.
- 58. Same, dorsal view.
- 59. *Cicurina rudimentops* Chamberlin and Ivie, n. sp., epigynum.
- 60. *Citcurin pampa* Chamberlin and Ivie, n. sp., epigynum.
- 61. *Cicurina microps* Chamberlin and Ivie, n. sp., epigynum, ventral view, cleared.
- 62. Same, external view.
- 63. *Cicurina minorata* (Gertsch and Davis), epigynum.
- 64. *Cicurina texana* (Gertsch), epigynum.

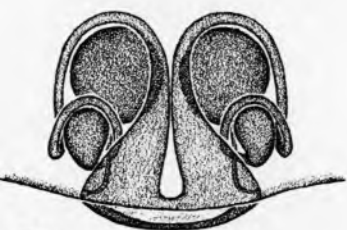
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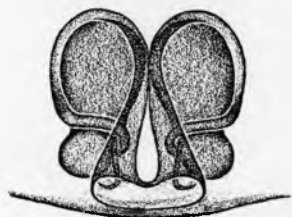
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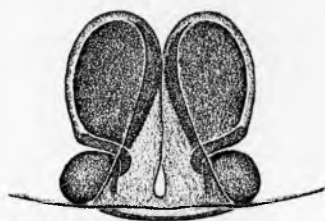
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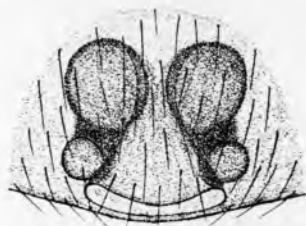
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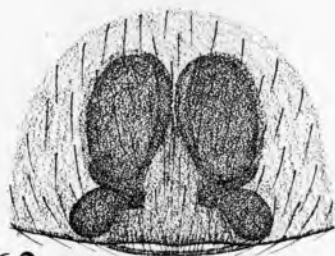
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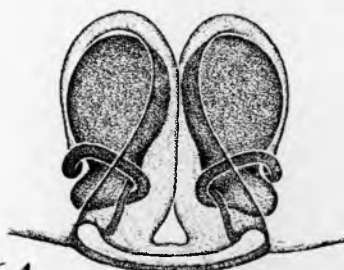


Plate IX.

- 65. *Cicurina pallida* Keyserling, left palpus, ectal view.
- 66. *Cicurina breviarum* Bishop and Crosby, left palpus, ventral view.
- 67. Same, ectal view.
- 68. *Cicurina cicurea* (Fabricius), left palpus, ectal view.
- 69. *Cicurina brevis* Emerton, left palpus, ectal view.
- 70. *Cicurina minima* Chamberlin and Ivie, n. sp., left palpus.
- 71. *Cicurina placida* Banks, left palpus, ectal view.
- 72. *Cicurina tersa* Simon, left, ectal view.



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Plate X.

- 73. *Cicurina pusilla* (Simon), left palpus, ectal view.
- 74. *Cicurina jonesi* Chamberlin and Ivie, n. sp., left palpus.
- 75. *Cicurina sierra* Chamberlin and Ivie, n. sp., left palpus.
- 76. *Cicurina altana* Chamberlin and Ivie, n. sp., left palpus.
- 77. *Cicurina intermedia* Chamberlin and Ivie, left palpus.
- 78. *Cicurina idahoana* Chamberlin, left palpus, ectal view.
- 79. *Cicurina simplex* Simon, left palpus, ectal view.
- 80. *Cicurina shasta* Chamberlin and Ivie, n. sp., left palpus.



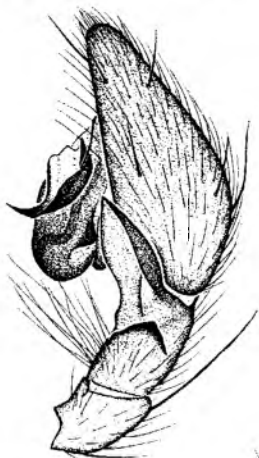
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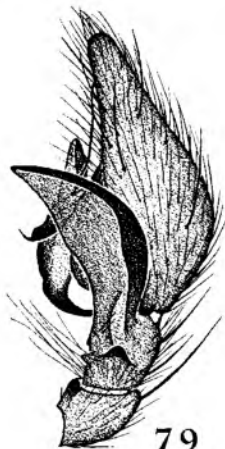
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Plate XI.

81. *Cicurina ludoviciana* Simon, left palpus, ectal view.
82. *Cicurina varians* Gertsch and Mulaik, n. sp., left palpus.
83. *Cicurina davisi* Exline, left palpus, ectal view.
84. *Cicurina arcuata* Keyserling, left palpus (Rocheport, Mo.)
85. Same (Macon Co., North Carolina).
86. *Cicurina cavealis* Bishop and Crosby, left palpus.
87. *Cicurina robusta* Simon, left palpus, ectal view.
88. *Cicurina utahana* Chamberlin, left palpus, ectal view.
89. Same (variation from Wasatch Mts., Utah).



Plate XII.

90. *Cicurina texana* (Gertsch), left palpus, ectal view.
91. *Cicurina microps* Chamberlin and Ivie, n. sp., left palpus.
92. *Cicurina hexops* Chamberlin and Ivie, n. sp., left palpus.
93. *Cicurina varians* Gertsch and Mulaik, n. sp., ectal view (represents a characteristic profile for the genus).
94. *Cicurina buxata* Chamberlin and Ivie, n. sp., dorsal view.
95. *Cicurina varians* Gertsch and Mulaik, n. sp., eyes of female, dorsal view.
96. *Cicurina minorata* (Gertsch and Davis), eyes of female, dorsal view.
97. Typical chelicera, posterior view.



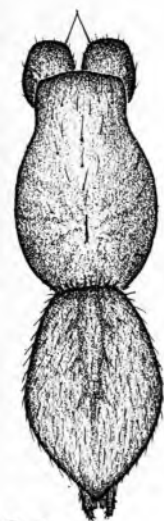
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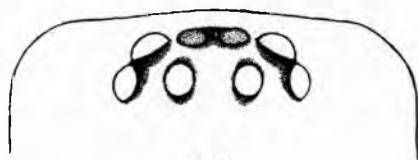
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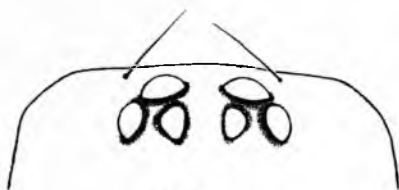
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Posterior

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